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A description of five 70-ton cars, in which the use of welded rather than riveted construction produced a substantial saving in weight, which may be devoted to increased revenue load-carrying capacity.

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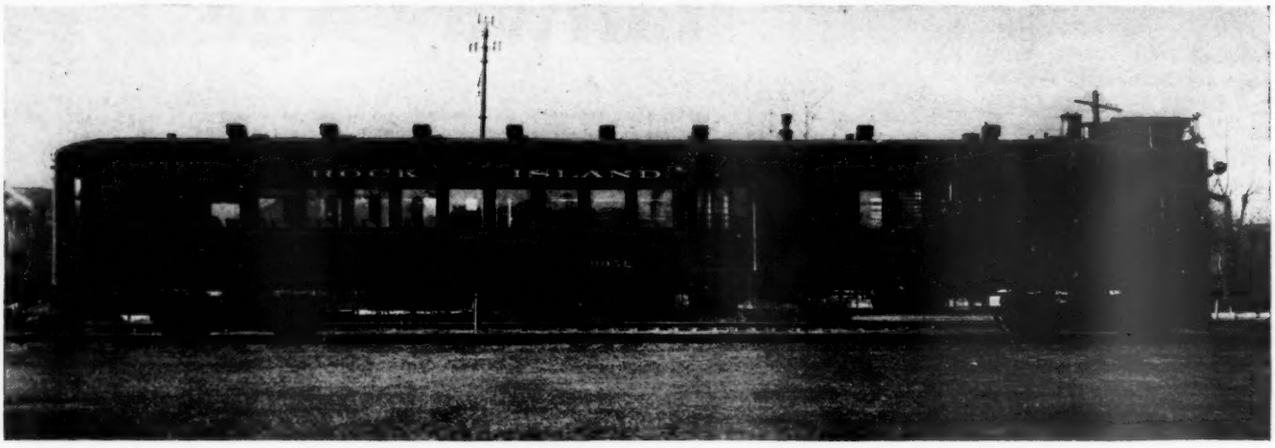

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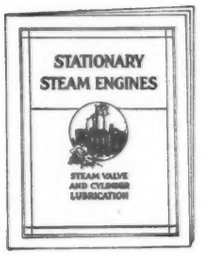

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RAILWAY AGE

Progress of Railway Co-operation

The railway situation is very serious and presents a problem of vital importance to the public. Railway executives agree that it is serious, but disagree somewhat as to the extent to which it will be improved by a revival of general business alone. Some of them say it is no worse than it has been at times in the past, while a larger number say that, measured by present and prospective traffic and earnings, as affected both by the depression and by outside competition, it is the most menacing that it has ever been. Because of the large decline of passenger earnings and the small growth of freight business during the last decade, and the unprecedented competition of other agencies of transportation, the problem now presented certainly is new in important respects, and the situation demands the most thorough study and constructive action possible.

The views expressed by different executives undoubtedly are influenced by the way present and prospective conditions affect their own properties. While, however, the conditions confronting different railways and groups of railways vary, their points of similarity are more important than their points of dissimilarity, and the solution of the problems of each railroad is largely dependent upon the solution of the problems of the industry. If the problems of the industry are to be solved, the initiative in formulating and securing adoption of the necessary policies must be taken by railway executives. Undoubtedly railway executives can bring about their solution, but they can do so only by conference, co-operation, and courageous action.

Problems That Demand Solution

In the *Railway Age* of April 4 there appeared an article by F. J. Lisman advocating the creation of an "umpire" to help solve the problems of the industry. Discussions of this plan, both pro and con, were published in our issues of April 18 and 25, and in this issue there appears an article by Mr. Lisman in which he answers his critics. The *Railway Age* is a forum for the discussion of transportation questions, but the publication of views and proposals such as those of Mr. Lisman does not necessarily indicate that we agree with all of them.

Differences regarding such proposals should not, however, be allowed to obscure the fact that the problems for the solution of which they are offered do exist, and that it does not advance their solution merely to reject plans offered for solving them as unsound or impracticable. Among the important problems confronting the railroad industry are the following:

1. Competition in rates.—The "shipper terrorism" to which Mr. Lisman refers is a fact to the existence of which reference is constantly made by railway officers, and especially by traffic officers. It hinders concerted action to advance many rates which traffic officers say should be advanced. It results in reductions of many rates which traffic officers say should not be reduced. The past failure of the railways to get adequate revenues has been attributed by their own officers in considerable measure to excessive competition. However, without an "umpire" having been created, agitation regarding the matter, and the increasing restrictions being placed by railway presidents on reductions of rates by individual lines without previous conferences with other interested lines, is reducing the evil effects of competition in rates.

2. Competition in service.—Railway officers concede and complain that there is excessive competition in passenger and freight service. Between cities in most parts of the country there are now being run more luxurious passenger trains than are needed to handle the available traffic. Many travelers criticize the railways for operating so many trains, and the Interstate Commerce Commission is applying pressure to reduce the waste believed to be resulting. Railway officers also voice criticisms of competition that is resulting in the speeding up of freight trains, and of the expense being incurred because of this. If competition is causing excesses in the rendering of service, and unnecessary expense, obviously, not the Interstate Commerce Commission, but railway executives, should be the first to take steps to reduce it.

Curiously enough, while the commission is trying to reduce competition in service, the law that it administers requires competition, mitigated only by such consolidations as the commission may authorize. The purpose of the commission in trying to reduce competition evidently is to so curtail expenses as to

minimize the necessity for advances in rates. It is somewhat difficult to see how, under a law requiring competition, the commission can consistently use the effects of competition as an excuse for holding down rates.

3. Competition of other means of transportation.—The railway executives adopted a program respecting this last November. There has been enough difference between the views publicly expressed by them to enable opponents of their program to say they do not agree regarding it; but real progress is being made in securing, or at least advancing, the legislation necessary to give the program effect.

4. Public relations work.—As a result of the work done already, both by groups of railways and individual lines, there is a more general understanding of the situation of the railways and more sentiment favorable to them than there ever was before. There remains, of course, much work to be done to take advantage of this understanding and sentiment sufficiently to secure the changes in regulation by the Interstate Commerce Commission, and in state and federal laws, that are imperatively needed, not merely to restore railroad earning capacity to what it was before the present depression, but to increase it. The dangerous financial plight to which many railways have been reduced during the depression is conclusive evidence that they should be allowed to make better earnings in periods including years of both good and poor business.

Progress Is Being Made

What the facts show, then, is that the railways are confronted with a serious situation; that it is partly of their own making but more largely due to government transportation policies that they have opposed and are trying to get changed; that the initiative and co-operation of their executives is essential to that solution of the problems of the industry without which the railway situation can not be sufficiently improved; but that increasing efforts and progress are being made toward their solution.

Railway executives are men of ability and independence of thought. There are numerous real, and many more apparent, conflicts of interest between the properties they represent, and, as individuals, they are more likely to be criticized or commended for the operating and financial results of their own properties than for the effects that what they do has upon the fortunes of the railroad industry as a whole. It is only too easy, therefore, to understand why it is difficult to secure agreement and co-operation between them on policies essential to the welfare of the industry. Such agreement and co-operation can be secured only through compromises for the common good, and the making of the concessions necessary for compromises is not easy for the strong individualists required for the successful management of great properties.

Nevertheless, the successful management of the various railways steadily becomes more and more dependent upon the successful conduct of the entire industry, and conferences, agreements and unity of action constantly become more essential to the success of the industry. Government regulation increased the necessity of co-operation between railways; and the competition of other agencies of transportation has made more essential agreements on policies for the industry and organized and united action in behalf of such policies. Many impracticable proposals for organized and united action may be made; but from the discussion of all the proposals that may be offered, impracticable or practical, good is sure to come.

Ton-Mileage Fairest Basis For Commercial Vehicle Tax

Taxation levied on interstate motor transport operations which does not apply with equal weight to intrastate vehicles is not looked upon with favor by the Supreme Court. A number of such laws have been passed only to be declared unconstitutional. The most recent instance was noted in the *Railway Age* of April 25, the declaration of the invalidity of a Tennessee statute levying a "privilege" tax on interstate motor buses.

What *is* a fair basis of taxation for commercial motor vehicles? Should it not be a tax proportionate both to the weight of the vehicle and its comparative use of the highways? A tax so based and levied without discrimination on all intercity commercial operations whether intrastate or interstate and whether private, contract or common carriers seems to be, from a standpoint of absolute fairness, almost the ideal. It is a form of taxation which has been adopted in several states and which deserves wider application.

In the *Railway Age* of April 18 we commented upon the new Kansas statute for commercial motor vehicle taxation and regulation—calling attention to the wise exclusion of local bus and truck lines, private automobiles and farm trucks from additional levies. The importance of this distinction cannot be overemphasized. Local operations, where they are taxed on the same basis as long distance operations are, in effect, being charged for highway facilities which they do not use. There is no excuse, either, for additional taxes on farm vehicles and private automobiles which, comparing their weight and mileage to that of long distance commercial operations, are in most states paying more than their share of highway costs. Intracity transport and hauling from farms to markets have always depended upon the highways and must always depend upon them. If the highways, however, are to be called upon to perform a new duty—that of the long distance transport of freight and passengers for profit—is it not eminently fitting that those who propose to make this new use of the highways should pay every cent of the additional expense which such added use entails? And, again, what fairer measure of this use could there be than that of ton-mileage?

If we may assume that ordinary license fees and

gasoline taxes are a contribution to the general cost of highways made by all who use them whether for business or pleasure, then it follows that levies on long-distance commercial operations should be over and above such ordinary taxation, just as their use of the highways is over and above that of other vehicles. And here again ton-mileage is the fairest measure.

How much should this tax be? In Iowa it is ¼ cent per gross ton-mile for pneumatic tired vehicles. Is his too great a burden upon legitimate and economically justifiable highway transport? In the *Railway Age* of April 25, page 818, a bus operation by the Illinois Central in that state was described in which the ton-mile tax alone for one bus totaled $1,511, or twice as much as the average total taxation per bus for the country as a whole. In spite of such taxation, however, the net earnings of one bus were $1,886 for the year, a handsome rate of return on the investment. Ton-mile taxes on a basis much higher than those usually levied are, apparently, no handicap to a highway operation which serves a real economic need.

One of the recognized advantages of a federal form of government is the variety of experimentation which it permits. When, by such experiment, one state develops something of merit other states may adopt the idea without themselves going through the painful process of trial and error. As pointed out in the *Railway Age* of April 18, Kansas has done a service to her sister states by differentiating clearly and logically between the classes of motor vehicles which should in fairness be subject to special taxation and those which should be exempt, and by placing such special taxation on a ton-mile basis. Iowa has shown that such taxation may with reason be five times as great as that levied in Kansas (where the rate is but ½ mill per ton-mile). Those who favor the general establishment of an equitable basis of commercial vehicle taxation might do well to set up as a goal for their efforts a classification of vehicles such as that of Kansas, with the ton-mile rate obtaining in Iowa.

Safety on Rails Constantly Increasing

Nothing reflects more credit on managements and employees than the constant improvement in the accident record of the railways due to betterments in plant and to the safety campaigns carried on in years of both prosperity and adversity. The railway accident record of 1930 was the best in history, and the record of 1931 was begun in January with a reduction of almost 18 per cent in fatalities, which indicates that the safety of employment and traveling on railways again will be increased this year.

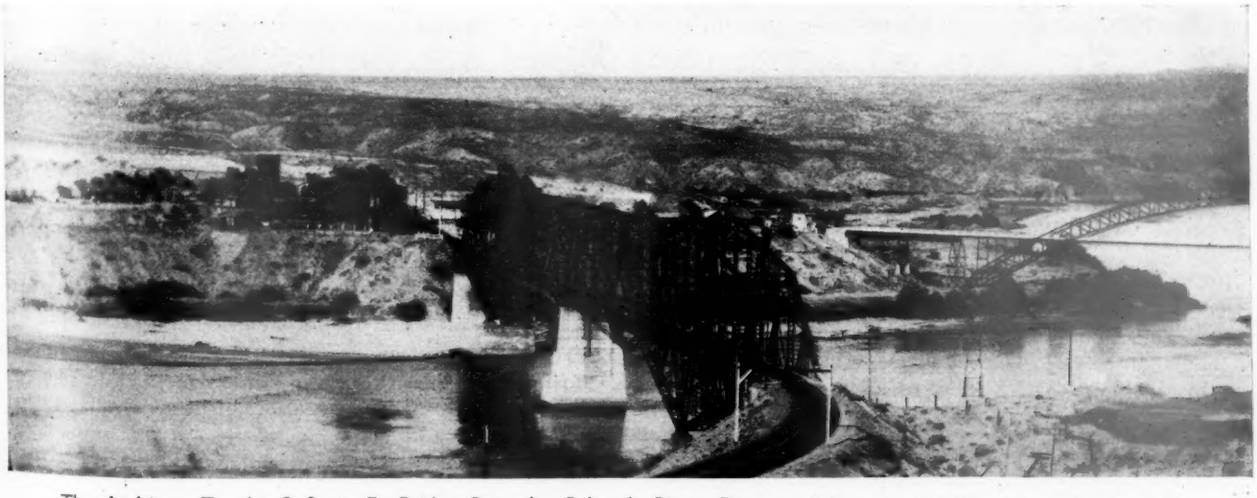
Only 935 employees were killed in 1930, or one out of each 1,632 persons employed. In 1929 the number killed was 1,348, or one out of each 1,264 employees. As recently as 1927 the number of employees killed was 1,490, or one out of each 1,194 employees.

The number of passengers killed in 1930 was 50, as compared with 100 in 1929, 85 in 1928, and 82 in 1927. The number of passengers carried for each one killed in 1930 was more than 14 million, as compared with less than 8 million in 1929, about 9 million in 1928, and about 10 million in 1927.

Both the safety of employment and the safety of travel on the railways, as these figures show, increased about 40 per cent between 1927 and 1930, and this improvement was made in addition to improvements constantly made during the preceding twenty years.

The number of fatalities at highway grade crossings declined from 2,485 in 1929 to 2,020 in 1930, and declined from 172 in January, 1930, to 144 in January, 1931. The railways are in only a small measure responsible for accidents at grade crossings, but the figures show that even they are now being reduced, principally owing to the "Cross Crossings Cautiously" campaign of the American Railway Association, and to protective measures which have been adopted by the individual lines.

* * * *

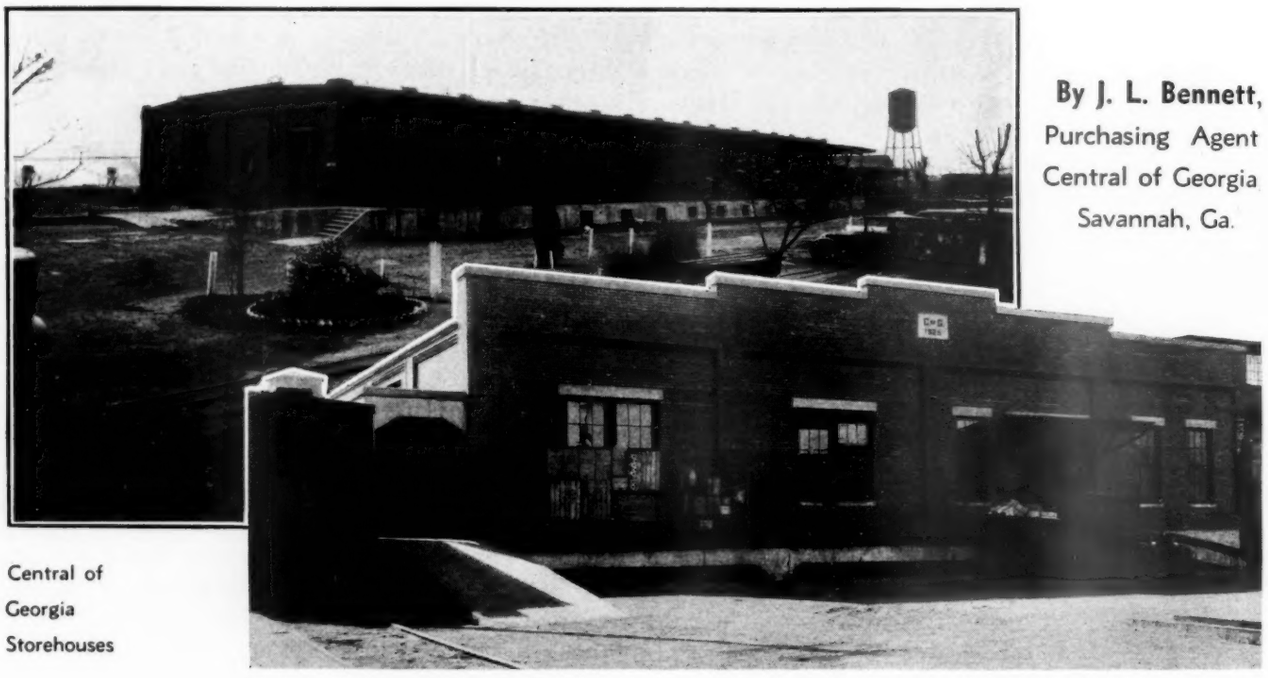


The Atchison, Topeka & Santa Fe Bridge Over the Colorado River, Between Arizona and California, at Needles, Cal.

Central of Georgia Supply Methods Show Progress in South

Substantial facilities provided – Accountings centralized – Short cuts in pricing

By J. L. Bennett,
Purchasing Agent
Central of Georgia
Savannah, Ga.



Central of Georgia Storehouses

THE investment in materials and supplies on the Central of Georgia is kept at a minimum by reason of modern methods of ordering, handling and caring for stocks sufficient to meet the needs of the railroad. Quick turnover is accomplished by anticipating work programs wherever practicable and by the interest taken in the amount of material carried in stock by supervisors as well as by executive officers. Stock books are maintained at all storehouses, and are forwarded to the general storehouse each month for checking purposes before the orders are placed upon the purchasing department. All unapplied materials, wherever located, are carried in the material and supply account, and responsibility for their control rests with the purchasing and stores department, and transfers, etc., are made under its direction.

Well-Equipped Storehouses

The general storehouse, located at Macon, Ga., is a two-story brick structure, 202 ft. long and 77 ft. wide, with a 12 ft. 7 in. unloading platform at the side and a covered platform 94 ft. long by 58 ft. wide at the rear end. This building is constructed on the edge of an embankment, which permits a loading and unloading track on each floor. The upper floor is used for retail issues and the basement floor for wholesale, or bulk, material and supplies. The shelving is all of the open daylight type, painted white with green trim. The materials are on trays, each tray carrying the accumulated count.

The oil house at Macon is a separate two-story building of fireproof construction equipped with a Bowser pump system. The tanks are stored in the basement and painted with aluminum to give the desired lighting effect. The outside storage at Macon consists of a casting dock, which is located beside the machine shop and is served by a gantry crane, which also serves the shop scrap dock.

There are two scrap docks, one beside the car shop and the other at the locomotive shop. Since Macon is located centrally, all scrap for the system is shipped there, where it is assorted and prepared for sale. A crane at the car shop also serves the wheel yard, both in loading and unloading. The lumber yard is located in the car shop and consists of skids made of scrap rail on creosoted pile ends.

In addition to the general storehouse at Macon, the facilities include division storehouses at Savannah, Ga. and at Columbus, and sub-storehouses at Albany, Ga., Atlanta and Cedartown, and Eufaula, Ala.

The bulk of heavy engine repairs are handled at Macon. All passenger car work is centered at Savannah and freight cars are repaired at Columbus, Savannah, and Macon.

The stationery store is located in a brick building at Savannah. The unit system is observed in the stacking of forms and stock books are also used in this department. A car equipped with racks for forms, etc., is attached to the supply cars and supplies are issued to the smaller agencies direct from the car, while larger agencies are furnished direct from the stationery depart-

ment, the shipments being made by freight in special boxes. Multigraph machines are employed and many of the forms are prepared in this manner at quite a saving in comparison with printer's costs.

Treat Timber

The company has its own creosoting plant for the treatment of lumber, cross ties and piling. This plant covers about 30 acres of land, including that required for the storage of materials for air seasoning before treatment. It consists of three treating cylinders 7 ft. in diameter, two of which are 116 ft. long, and one 84 ft. long, together with a full complement of pumps, an air compressor, boiler and working and storage tanks necessary for the operation of the plant; as well as the necessary standard and narrow gage tracks to serve the yard. We also have two 500,000-gal. storage tanks and a pump house for receiving shipments of creosote oils by boat at Savannah.

Centralized Accounting Adopted

The account for material and supplies is handled in a separate department under the jurisdiction of a stores accountant who reports direct to the purchasing agent. Striving always to find the most economical system consistent with good service to all departments, we have discontinued keeping accounts for each store, and all store accounting is handled on a system basis. The stores accounting is divided into the material classifications recommended by Division VI, A. R. A.

All invoices are manifested by the purchasing agent, after certification as to price by the general storekeeper or the department for which the material is purchased, and a copy of the manifest is sent to the stores accountant. The general storekeeper or the heads of other departments approve the invoices as to the receipt of the material, showing the date received, and forward them to the stores accountant, where they are checked as to extensions, f.o.b., point, freight, etc., and also checked against the purchasing agent's manifest. Invoices due are traced at regular periods.

Discount invoices covering material paid for prior to the receipt of the material are handled in the same manner as regular invoices, except that they are supported by a form which is made in duplicate, showing the date received as well as any exception to the material. All vouchers for material are issued by the stores accountant and regular invoices are accumulated by firm names and the vouchers are issued twice each month while discount vouchers are issued each day.

In the Division Store on the Central of Georgia

Freight charges covering company material are rebilled by agents at storehouse points to the stores accountant, on a company manibill form and these charges are matched with invoices on shipments purchased f.o.b. destination, the freight being deducted from the invoice before the voucher is issued. Freight on material covered by discount vouchers purchased f.o.b. destination is billed to the shipper on regular bills collectible. A voucher is issued at the end of each month to cover total freight charges received during the month. This voucher is issued in favor of a clearance account, "Other Carriers Freight Charges", to which is charged all company freight billed by agents.

At the close of each day all storehouse tickets and shipping notices covering material issued at various points are sent to the stores accountant where they are priced and extended. These are then billed to the various departments which designate the accounting to the primary operating expense accounts. In order to reduce work, but at the same time to allow the mechanical department to keep up with its allotments, tickets for material used at shops are recorded each day. These are consolidated at the end of the month, when one department bill is issued.

Cheaper Labor Has Not Closed the Eyes of the Central of Georgia to the Economies in Automotive Equipment for Handling Material

Pricing has been greatly facilitated by the use of average prices on various items which are used in large quantities, such as machine bolts, nuts, washers, castings, lumber, buckets, etc. The prices are placed on revolving upright boards. There are five of these boards in a rack across the center of a desk, which permits their being used by two price clerks at the same time. For these items it is only necessary for the price clerk to raise his eyes and the price is before him. Other prices are placed in Brooks visualizers consisting of a loose leaf book form with a sheet for each item and sufficient space for six years prices. New prices are placed in the book as the invoices are received. All prices are in the classification order, alphabetically arranged and thoroughly indexed.

Material reports are used by track supervisors and supervisors of bridges and buildings for material used on the line or road. These reports show the quantity of material on hand at the first of the month, the material received, used or shipped and the balance on hand. Special space is provided for used material so that the proper distribution can be made to the various jobs. Material used on the line of road is priced direct from supervisor's reports and billed to the division on which used.

The stores accountant handles all of the accounting to primary accounts for supplies and expense of general offices, as well as accounting in connection with the purchase of new rolling equipment.

Court Hears Suit to Enjoin Grain Rate Order

THE hearing on the petition of the Western Railroads to enjoin the Interstate Commerce Commission from enforcing its order, which becomes effective on June 1, for the revision of rates on grain and grain products opened at Chicago on May 6 in the United States District Court before Judges Charles E. Woodward and Walter Lindley of the District Court and Will H. Sparks of the Circuit Court of Appeals. Frederick H. Wood of Cravath, De Gersdorff, Swaine & Wood of New York presented the case for the carriers.

A petition to enjoin the enforcement of the commission's order has also been filed by the Terminal Grain Company of Fort Worth, Tex., and three other milling companies who allege that the reduction in proportional rates to and from Kansas City, Mo., and other cities are unduly preferential to those markets. These petitioners also take issue with the commission for prescribing the same rates on domestic flour in carload lots as on domestic wheat shipped in the same manner. Motions to intervene in the suit were presented by John E. Benton of Washington, D. C., on behalf of the Arizona corporation commission and eleven other state public utility commissions and by Frank A. Leffingwell on behalf of the Board of Trade of Kansas City, Mo.

The brief presented by Mr. Wood followed essentially but in greater detail the argument outlined in the petition filed with the district court on April 29. Mr. Wood introduced an affidavit prepared by L. E. Wettling, manager of the Statistical Bureau of the Western Lines, who had applied the reduced rates to grain and grain products shipped during the last crop year. From this it was estimated that all roads in the Western district would suffer an annual loss of $21,500,000 under the proposed rates or an average reduction of 11.29 per cent in revenues from that source. Other affidavits from representative roads estimated that the effect of the proposed rates in total amount of decreased revenues and percentage reduction would be as follows: Atchison, Topeka & Santa Fe, $3,314,000, 13.3 per cent; Union Pacific more than $2,000,000, 11.5 per cent; Missouri Pacific, $2,142,000, 21.72 per cent; Chicago, Rock Island & Pacific, $1,600,000, about 10 per cent; Northern Pacific, $500,000.

The argument by Mr. Wood for the railroads was completed on May 7.

In their petition the railroads called attention to the special report of the interstate Commerce Commission to the Senate Committee on Interstate and Foreign Commerce on January 12 in which it stated that "the railroads have never been able, since 1920, to obtain the aggregate earnings contemplated by Section 15a (of the Interstate Commerce Act), and they are faced with continually increasing competition from other forms of transportation." It was also pointed out that the commission took the action to reduce grain rates in the face of findings in connection with the Kansas Public Utilities Commission v. A. T. & S. F. Ry. Co. case in 1923, which the commission held afforded no basis even for a suggestion as to a reallocation of the transportation burden. In that case the commission found that it was improbable that a reduction in the then existing rates would so increase the movement of grain and grain products as to enable the carriers to make up to any appreciable extent the loss in revenue if a general reduction in those rates should be ordered.

Later the commission instituted an investigation on its own motion into the then-existing rates on grain, grain products and hay in the Western district and found, among other things, that the earnings per car, per car-mile and per ton-mile on grain and grain products did not show that grain and its products were contributing more than their fair share to the revenues of the carriers; that the adjustment of rates on grain from the "element of value" standpoint was not unfavorable to grain; that there were no assurances that there would be further increases in tonnage or reductions in operating expenses in the immediate future that would enable the carriers to earn an excess over fair return, and that the benefit which would accrue to the average farmer by a reduction in rates would be small compared with the disastrous effect on the carriers' revenues and their credit. The commission also stated that "there is serious doubt whether farmers would not in many instances lose from impaired railroad service more than they could possibly gain from a reduction in rates, even if the farmers would get the entire benefit of any reduction made." The petition states that the general level of rates now in effect, which will be materially reduced if the commission's order shall become effective, is the same that was upheld in the commission's investigation in 1923 and 1924.

The carriers maintain that the recent order of the commission is a reversal of the action taken in the Kansas Public Utilities Commission case and in other more recent cases. It is further charged that "the commission misinterpreted and misconstrued Section 15a and proceeded upon a misconception of its powers and duties thereunder, and that for the standard imposed by Section 15a, the commission substituted a vague and indefinite standard erroneously assumed by it to have been created by the Hoch-Smith resolution for application in all cases relating to the determination of the rates on agricultural products." The petition asserts that in numerous other cases the commission has prescribed or

(*Continued on page 912*)

If Not an "Umpire," Then What?

Railroads with 40 per cent of mileage generally favorable to proposal—Will business revive in time to save railway credit?

By F. J. Lisman

SINCE the publication of this writer's plan for a railroad "umpire" in the *Railway Age* of April 4, which, as stated at the time was proposed for the purpose of drawing forth criticism and suggestions, the writer has had directly and indirectly the benefit of much criticism. Constructive suggestions, however, bearing directly upon the plan or designed to solve the problem at which it aimed, have been few.

Competitive wastes and weakness on the part of the railways in meeting "shipper terrorism" are generally admitted but no suggestion of a remedy for these conditions in lieu of the "umpire" plan has been forthcoming.

It has been suggested that the railways agree that no rate reduction to which there is any objection be made until the executives of competing lines have an opportunity to discuss the matter with the president of the line which proposes the reduction, but a sufficient number of the railways declined to accept even this very moderate proposal, thus preventing its being made effective. Quite likely such roads might support their traffic departments under any condition but, at any rate, the proposal that their presidents at least should be willing to *discuss* such a reduction seems modest in the extreme. Cannot the industry at the very minimum take this one very moderate step in the direction of co-operation?

Subjects for Study Are Not Definite Policies

Some of the criticisms of the "umpire" plan seem to be based on some misunderstanding of the proposal. One such appeared in the *Railway Age* of April 18, page 761. This comment refers to the fact that a rule excluding a line more than 30 per cent longer than a short line would probably leave Pittsburgh with but two or three routes competing for New York and most of the eastern seaboard business.

The plan outlined merely stated: "The bureau for the elimination of competitive wastes would *study* the following":—Nothing was said as to what the definite recommendations of this bureau would or should be.

The critic further questioned the advisability of closing off-line traffic offices. The article merely said: "The writer believes that if there were less off-line offices, with possibly one-third as many solicitors at possibly twice their present salaries, with the elimination of the unfit, the net results would be more satisfactory." Off-line offices do not increase the total volume of freight by even one pound. They are listening posts for soliciting business and as such, to a reasonable extent, are probably necessary in the competitive game. But surely the number of such offices is excessive.

The next criticism was that the umpire would be confronted by many geographical problems and the competition between large manufacturing and distributing centers for markets—a fair example being cited in the competition between coal fields competing for the lake cargo business, with reference to the treatment of Messrs. Esch and Wood by the Senate. The answer to this is that the umpire would have to be a man who would, after studying matters thoroughly, have the courage of his judgment and be prepared to face philosophically criticism or damnation for his decisions by some or all parties to a controversy. There is a saying in Wall Street that the test of a good plan or reorganization is whether the amount of condemnation which it receives from all sides is approximately equal. Decisions unsatisfactory to the various lines would probably be more or less forgotten or at least forgiven a few weeks later, when the executives realized the fact that the umpire should not be shot if he were doing the best he could.

How Powerful Are Commerce Chamber Secretaries?

The question is raised: "What would the umpire do in the Rochester case?" The answer is that the umpire undoubtedly would be wise enough to know that "Nothing is eaten as hot as it is cooked," particularly if it is cooked by the average chamber of commerce. This particular chamber of commerce may not be the average but, on the other hand, the city of Rochester is rather an exceptionally high class, intelligent community and the shippers of that city would undoubtedly be dictated to to only a small extent by the secretary of their local chamber of commerce. Surely it could be proved to the citizens of Rochester that the number of railroad employees on the payrolls within that city and its immediate radius makes the railroads very nearly the largest industry in that community. They would then realize that they would be cutting off their noses to spite their faces if they carried out a threat to boycott the railroads. Harkening to the generally very loud voices of local chambers of commerce is responsible for much whittling of the rate structure.

Traffic men are like most salesmen; they generally report that they could do more business if prices were lower. They think of the volume of business instead of net profits.

The critic further says: "Similarly the writer's dismissal of the enormous amount of experimental work the railroads are doing themselves and even greater research of the manufacturers of railroad appliances, indicates lack of familiarity of the conditions as they really are". The writer distinctly referred to the work of the American Railway Association—the amount it is expending for research—and allowed for a similar amount which is being spent by the individual companies. He also suggested that, if such a bureau for experiment "should be deemed necessary", it might be merged with the A. R. A.

The critic goes on to say: "Incidentally, any savings in this direction (closing of off-line offices) in view of the ratio of traffic expenses to the total, would be relatively unimportant. On the other hand, I am convinced that the umpire and the organization provided by him in this article would add materially to the railroads' costs of doing business."

The writer, in the plan, referred to the possible re-

duction of traffic expenses by 20 per cent which is about parallel to the recent reductions in other departments. It was also pointed out that such reduction would amount to some 25 million dollars and added: "On the other hand, it is hardly conceivable that the umpire with all his bureaus would ever cost as much as 5 cents for every $100 of gross earnings". Allowing for gross earnings of five billions, 5 cents per $100 would amount to 2½ million dollars, or just one-tenth of the amount which might be saved by the proposed reduction of traffic department expense. But included in that 2½ million would be the salaries of rate clerks and many other employees now on the payrolls of railway companies or railway organizations.

The writer does not claim to know a fraction of what the average railroad executive knows about the details of railway operation, but he does claim to know fully as much as many of them do about railroad credit. A number of railroad men seem to think that the present low level of railroad credit is temporary. They do not in the least seem to visualize the fact that the average individual and corporate investor is greatly alarmed about the situation; that he feels the railroads may be passing into desuetude like the interurban electric lines and that he had better dispose of his railroad securities. The writer is in position every day to see actual examples of this feeling on the part of investors.

Will Business Revive in Time to Save the Railways?

The writer believes from his close contact with the investing public that many railroad men underestimate the present low status of railway credit. Many railway leaders express themselves to the effect that the present low earnings of railroads are temporary and that, owing to the excellent physical condition, management, etc., of the properties and the reductions in expenses—many of which will be permanent—their net earning capacity will increase hereafter. Those who hold this view think Wall Street and the public are suffering from temporary hysteria, and want to let it go at that. They do not seem to visualize now, any more than they did a year ago, that the present business depression may last for some years; that it may be a major depression similar to the ones which lasted from 1875 to 1879 and from 1893 to 1898; that the bonds of many companies which are now legal for savings banks and trustees will cease to be so at the end of 1931; that many of the companies will have difficulty in meeting bond maturities as well as interest charges. They do not seem to visualize that a series of railroad receiverships will tend to further depress railroad credit. Even assuming that the present depression is temporary, recovery cannot be a rapid one. Passenger business will probably not show an increase, anyway, and freight rates are being reduced and are hard to lift.

Some railroad men evidently do not realize that the declining price of all but the very highest class of railroad bonds is impairing the solvency of many banks and other monied institutions, and may be the cause in whole or in part of further bank and other failures with consequent misery and prolongation of the business depression. They do not think of the countless investors aggregating, with their dependents, many millions of people who not only are economizing now on account of reduction in dividends already effectuated but who are in fear of greater reduction or cessation of income and, therefore, are holding on to every penny and preparing for the worst. In view of all this, the time is already here when none but a very few of the strongest railroads can obtain capital for further expansion, and this condition acts as a further check to business of every kind.

Some believe that just as soon as business improves, which may happen within a few months, and with consequent improving earnings, the railways will do as well as ever, or better, and that everything will then be quite all right and the present scars forgotten.

The writer feels certain that the present truck and possibly the bus competition is now at its maximum, because much of this business is being handled by those carriers below cost, for the reason that many do not yet know their real costs; others hope to do better "in time". Nevertheless, even if this optimistic view about the business outlook be accepted, passenger and short haul freight business is bound to be less by at least 20 per cent. Many rates have been whittled down in the meanwhile and the pipe lines are steadily cutting more or less into the oil, coal and even gasoline tonnage. Railway tonnage has grown very little indeed during the last decade and with the decreasing immigration and birth rate, etc., is never likely to again increase at the former rate.

At best the railways did not earn a fair return in the boom year of 1929, so why expect that they will have a proper earning capacity without taking some definite steps to eliminate the wastes of competition? Are not the men who take such a hopeful view and who prefer to do things as they have always done, doing some very "wishful" thinking? Some one well said during the late war that the biggest sacrifice is the sacrifice of habit. The argument that the decline in railroad stocks is no greater than that in industrials is fallacious because careful investors have heretofore always looked upon industrials as less dependable. Railroad shares of the strong dividend paying roads have been considered nearly as stable as bonds and suitable for women's and children's nest eggs. A shrinkage of over 50 per cent in the value of even some of the best of them appeared unthinkable.

Active Co-operation Would Improve Credit and General Business

A public announcement that the railroads were co-operating with each other and the I. C. C. for the purpose of eliminating competitive wastes would emphatically change the psychology of the average investor; it would lift the price of railroad securities and thus greatly stimulate improvement in business.

To call, as my critic does, the short line question a "more important problem" than that of competitive waste seems to indicate a lack of understanding of the relative importance of these problems. There are many short lines but their total gross earnings are less than 2 per cent of the total gross earnings of all the railroads. The more important short lines pay a standard wage or close to it. Many of the minor ones, particularly those paying very low wages, should and will, in time, be scrapped. A study of this situation in eastern trunk line territory would probably show that such a revision in short line wages would not even amount to $25,000 a year. *The total difference between the wages paid out by short lines and standard wages is surely a fraction of what could be saved by the elimination of unnecessary off-line officers and passenger train services.* During the last ten years over 7,000 miles of non-productive trackage, mostly short lines, have been scrapped and only such short lines should and will be preserved as the Commission finds essential to the public. The writer fully covered this subject in the *Railway Age* as long ago as August 28, 1926.

Why hope for an increase in freight rates in western territory when members of the I. C. C. have in effect told the western lines that they should not ask for an increase in freight rates when they are running as many passenger train miles today as they did ten years ago with a de-

crease in passenger revenue of about 200 million dollars in the meanwhile?

The law provides for a fair return to the carriers when economically and efficiently operated. The Commission seems to think that the roads are not complying with this requirement when they fail to reduce competitive train mileage, etc. It is also interesting to note that at present the Commission docket is filled with requests for rate reductions for the alleged benefit of individual carriers which, if granted, will tend to further pull down the rate structure, with consequent loss of net earnings.

The railroads during recent years have appointed regional rate committees which have accomplished some good in avoiding rate reductions of this type, but too frequently members of these committees (presumably largely in view of the attitude of their superiors) have agreed to disagree, like the proverbial doctors. The appointment of a committee to discuss, defer and lay on the table the subject in question is a means of "passing the buck". The result when such a subject is tabled is that some one line goes ahead and does what it believes to be necessary to protect its own interest. Quite likely such action in many cases would be restrained to the benefit of the railway industry if some umpire or co-ordinator had the authority to do so.

The suggestion for a national public relations bureau seems to have been very generally misunderstood since many apparently felt that this would involve interference with their own public relations departments. The proposal was made, however, with the statement that "certainly all local contacts should be left to the individual roads".

The writer still believes that the benefits attainable by nation-wide co-ordination of publicity activities of the carriers are tremendous, but such a proposal is not an integral or essential part of the "umpire" plan.

Forty Per Cent of Mileage Favors Umpire

Up to the time of this writing, the executives of lines operating about 100,000 route miles have expressed themselves as substantially in favor of some umpire plan, while most of those who have expressed themselves against the plan seem to have done so because they did not fully understand the proposal in its entirety. Some of them appear to think that the umpire could annihilate the earning capacity of their properties. Of course, if the umpire had any such power, no one would be willing to co-operate.

Discussion with railway officers clearly indicates that that part of the plan as proposed which provides for an appeal from the umpire to other railroad executives is not practical because none of them want to sit in judgment on the problems of their friends for fear of antagonizing them.

Is not the railroad profession today full of capable men who, instead of co-operating, are stepping on each other's toes? Could not these able men put in their time to great advantage if they would confer with each other for the purpose of working out some plan—*any* plan—of co-operative action which will increase net revenues?

The I. C. C. is certainly not blamable for all of the present situation!

One well-known railroad executive writes: "Many railroads are doing very foolish things and if some way could be found to prevent the useless expenditures of money it might be for the benefit of the industry as a whole, but human nature is human nature and the evils that we find in railroad administration are found in practically every other industry. I might cite oil as an example: there is an enormous waste in all directions there but no one seems to have found a way to avoid it. I take it that the same thing exists in banking, in the textile industry and in nearly every other branch".

It is impossible to compare the waste in any one industry with that of another, but waste in the oil or textile industry is no concern of railway executives, whereas waste in railroads is very definitely their concern.

Some Action Necessary—If Not This Plan, What Then?

Most of those who oppose the umpire plan do so because they object to interference with management. The president of an important system, however, puts the matter very concisely by saying: "I am perfectly willing to sacrifice the right to initiate rates in consideration of the benefits I am to receive". The thirteen Colonies disputed for a long while before they would make the necessary surrender of rights in order to achieve the Union. They did so finally and it was only this action which preserved them and created the present strong United States. Even the strongest lines have more to gain by intelligent co-operation than they have to lose, even as the strongest individual states which entered the Federal union became, under that union, far stronger and far more prosperous than they ever could have become as independent nations.

As Mr. Woodlock says, it is up to the railroad managements if they do not like all or any of the suggestions contained in the umpire plan, to propose something else which is constructive for the purpose of achieving the desired goal—that is, increasing net earnings with the consequent restoration of railroad credit and the consequent stimulation of general business activity.

The present is a real emergency and it must be met as such. Let us sit down to think constructively, and reason together for the transportation industry as a whole and then each participant in the industry will be able to get its share of larger rewards than can possibly be forseen under existing conditions. Not many companies can be prosperous if the industry as a whole is prostrate. Again, in union there is strength!

One Cent a Mile Excursions

ALTHOUGH the recent one cent a mile excursions on the Pacific Coast and those in the East have been patronized heavily, those in the middle west have developed only a small amount of business. The Southern Pacific, through "dollar day" excursions—a round trip rate equal to three-fifths of the one way rate, which it placed in effect between all points on the system on February 20 and 27, and on April 3 and 4—secured such a substantial increase in passenger revenue, that it decided to operate another excursion, also good in coaches and sleeping cars, on May 8 and 9.

On April 24 and 25, western railways, including the Chicago, Burlington & Quincy; the Chicago & North Western; the Chicago, Milwaukee, St. Paul & Pacific; the Chicago & Alton; the Chicago Great Western; the Chicago, Rock Island & Pacific; the Wabash; the Chicago & Eastern Illinois; the Missouri Pacific; the Atchison, Topeka & Santa Fe; the Illinois Central, and the Minneapolis, St. Paul & Sault Ste. Marie, offered round trip tickets good in coaches and chair cars between practically all stations for about one cent a mile and round trip tickets good in sleeping and parlor cars for less than two cents a mile, but experienced only a slight increase in business on the two days. At the same time

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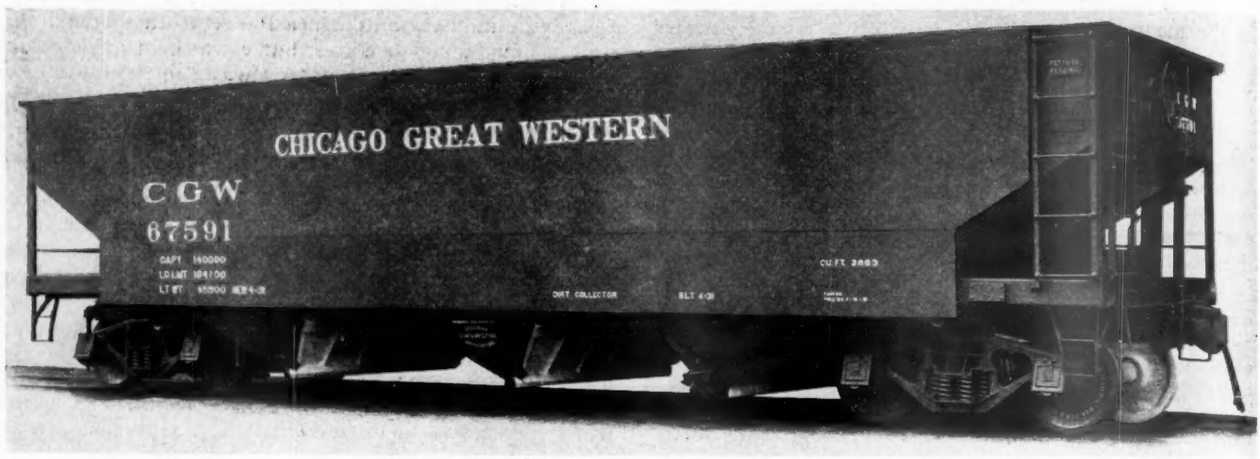


One of Five All-Welded Hopper Cars Recently Built by the Pullman Car & Manufacturing Corporation

Pullman Builds All-Welded Hopper Cars for the C. G. W.

Substantial saving of weight in five 70-ton cars devoted to increased revenue load-carrying capacity

WITH the primary object of developing a coal car to produce more revenue per pound of weight on the rails, the Chicago Great Western consented to have five units of its orders for 300 70-ton hopper cars, placed with the Pullman Car & Manufacturing Corporation in the latter part of 1930, built to a design proposed by the car builder and embodying, among other features, practically all-welded construction. These cars, recently completed and delivered to the railroad, weigh 45,900 lb. each, or roughly only as much as 50-ton cars of riveted construction. This means that 20 additional tons of coal can be carried in each car at no greater transportation expense for the movement of tare, or dead weight.

On the basis, both of reduced light weight and of increased capacity, the welded car shows marked superiority. With a light weight of 45,900 lb., it provides a cubic capacity (level full) of 2,863 cu. ft. As compared with the heaviest welded car in the accompanying list of typical 70-ton hopper cars of recent riveted design, the welded car weighs 10,500, or 18.6 per cent, less, and at the same time provides 85 cu. ft., or 3.1 per cent, greater cubic capacity, all of which is available for carrying increased revenue load. As compared with the lightest riveted car in the list, this is a decrease of 4,300 lb., or 8.6 per cent, in light weight, a notable reduction, in view of the fact that a gain of 243 cu. ft., or 8.9 per cent, in cubic capacity is made at the same time. On the basis of $100 increased earning power per car per ton per year, it is anticipated that the 70-ton welded car will produce, on the average, $400 more revenue per year than one of equal nominal capacity but incorporating ordinary riveted construction.

The Chicago Great Western 70-ton welded hopper car is of the conventional three-hopper type, with standard four-wheel trucks and 6-in. by 11-in. journals, but the body design is a distinct innovation, no cars having previously been built with the type of construction and amount of welding used in these cars. The entire body of each car, including a one-piece welded tubular steel center sill, is assembled by welding, and the only rivets used are those for fastening safety appliances, draft-gear supports, door hooks and similar parts subject to breakage or periodic removal. Even the pipe joints are made by welding, and that process is used to attach and anchor the train line and connecting pipes to the car body.

Both oxyacetylene and electric arc welding are used in the manufacture of these cars; the former on the heavier sections where strength and ductility of weld metal is the prime essential, and the latter on the light sheets where the lower heat of the arc reduces the probability of warpage.

There are approximately 1,500 lineal feet of welding in the car. Of the 200 lb. of welding rod required, 56 per cent is deposited by the oxyacetylene process and 44 per cent by the electric arc. The former method is used for the following parts: Center sill and all attaching parts; body bolster and all attaching parts, including side and floor sheets; all-pipe cross ridge; lower end construction; floor sheets, except where joined to the side and end construction; all pipe joints and pipe anchorage. The

Typical 70-Ton Hopper Cars of Comparatively Recent Design

Road	Light weight	Capacity, cu. ft. Level full	Capacity, cu. ft. 10-in. heap
New York Central	50,200	2,620	2,948
D. L. & W.	50,800	2,755	3,062
N. & W.	51,500	2,439	2,729
C. G. W.	52,675	2,778	3,100
C. M. St. P. & P.	52,800	2,778	3,100
C. & N. W.	54,900	2,590	2,900
I. C.	56,400	2,778	3,100
C. G. W. (all-welded)	*45,900*	*2,863*	*3,197*

following parts are welded with the electric process: All side-sheet construction; all upper end construction; all dump doors. The Oxweld Railroad Service Company co-operated with the Pullman Car & Manufacturing Corporation in refining design details to meet the welding requirements and in the supervision of the performance of the actual welding operations.

Welding Operations Checked and Cars Tested

Before beginning welding operations on the new cars, extensive tests, covering a period of several weeks, were made to determine the relative efficiencies and costs of various types of welded construction required in the fabrication and assembly of the car parts. Experienced operators were used for both the oxyacetylene and for the electric welding operations, these operators being required to submit test specimen welds at intervals as a check on the quality of their work. In addition, all welds were hammer tested during the course of construction, with two objectives, namely, to distribute local stresses and to permit the immediate correction and reinforcement of any welds which gave indications of weakness.

General Dimensions of Chicago Great Western All-Welded 70-Ton Hopper Car

Length over strikers	42 ft. 0 in.
Length over end sills	41 ft. 3⅛ in.
Height, rail to body center plate	2 ft. 2¾ in.
Side bearing centers	4 ft. 2 in.
Distance between truck centers	32 ft. 0 in.
Truck wheel base	5 ft. 8 in.
Length inside	41 ft. 0 in.
Width inside	10 ft. 2⅜ in.
Width over side sheets and overall	10 ft. 2¾ in.
Height, rail to top of side plate	10 ft. 8 in.
Cubic capacity level full	2,863 cu. ft.
Cubic capacity with 10-in. average heap	3,197 cu. ft.
Light weight of car	45,900 lb.
Revenue load with 10-in. average heap	164,000 lb.
Total weight on rail	210,000 lb.

Upon the completion of each car, it was painted with a cement wash, which was permitted to dry, and the car was then loaded with sand until its total weight on the rails was 210,000 lb. This load filled the car only to within 10 in. of the top, consequently being concentrated over a smaller area than would be the case with coal loading and introducing stresses in excess of any likely to be encountered under normal operation. A careful examination of joints gave no indication of the cement's flaking off, due to working of the joints or movement of the plates.

In addition to this practical test for stresses beyond the elastic limit, the loaded car was thoroughly tested with extensometers to measure the elongations and to determine the relative stresses within the elastic limit, encountered in various car parts. The use of the extensometers showed uneven stresses in certain parts of the car on the first loading, as, for example, around the bolster, which was reinforced and another test made. Certain plates also showed excessive stress on the initial loading, which was equalized on subsequent applications. As finally tested, each car showed a reasonably uniform distribution of stress not exceeding 9,000 lb. per sq. in. in all parts of the car, including the underframe, bolsters, side sheets, end construction, slope sheets, hopper doors, etc.

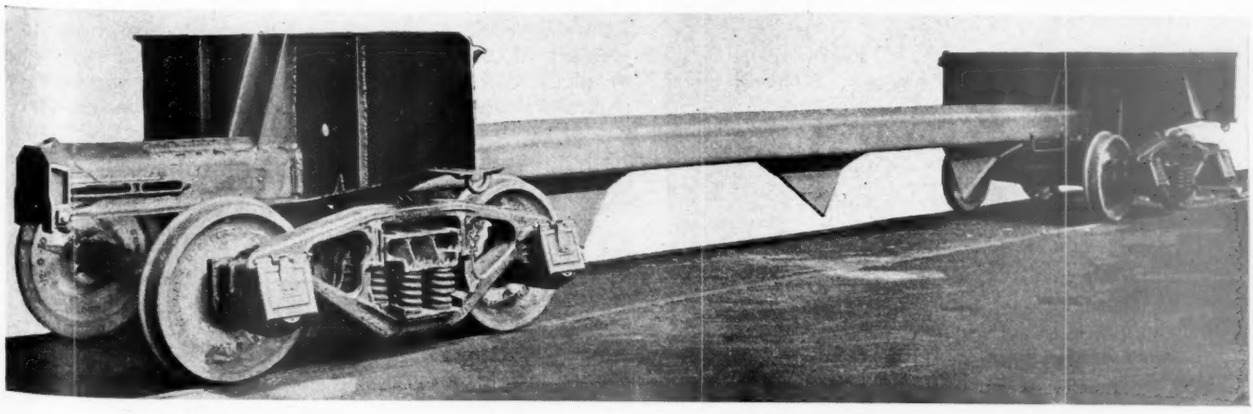
Following the static load test, an impact test was made, each car being brought up to a speed of 5½ m.p.h. and allowed to collide with a second car, similarly loaded, but with the brakes lightly set. No noticeable permanent effect on the structure of either car was apparent.

General Method of Construction Employed

The welded hopper car is designed to take advantage of the welding to tie in all members so that all parts of the underframe and superstructure act as a unit in resisting draft, buffing and load stresses. Pressed shapes, with large radii at the corners, are used, these shapes lending themselves to the welded construction much better than the usual structural shapes, and having the additional advantage of being light in weight. When welded to the sheets, they form box sections of greater strength per unit of weight than the usual structural shapes used in riveted cars. Flanges are largely omitted, not being required for the application of rivets. The stakes are placed inside the car and the side sheets brought out to the line of the riveted car to give maximum capacity. This construction requires the corners at the side ladder to be offset inwardly to provide clearance for the ladder. At the end opposite the ladder, the side is carried straight out to the corner without any offset. The car is designed to be self-clearing in every respect, the absence of rivets contributing effectively to this feature. All joints in the coal space are made with continuous welds so that there are no openings to permit the entrance of moisture and dirt and promote corrosion. In addition, the slope sheets are given a pitch of 1¼ in. from the sides toward the center, in order to drain water away from the corners where the corrosion takes place. This construction also tends to keep the center of the load moist and assist in unloading.

The body bolster is built up with a bottom cover plate and a web plate with proper flanges at the top for supporting the floor sheets. The sides are made of two sheets, joined with a continuous butt weld for their entire length. This provides a heavy sheet where the corrosion and hammering is most severe and saves considerable weight where the greater thickness is not required.

The side sill is formed of a plate in a channel shape in one piece from bolster to bolster. An intermediate side



All-Welded Tubular Centersill and Bolster Construction Used in New Chicago Great Western Hopper Cars

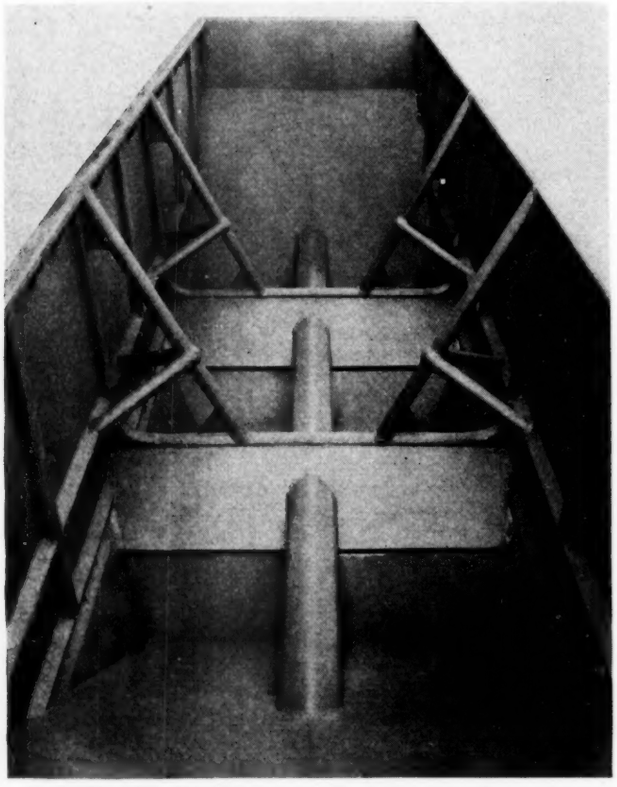
sheet stiffener is formed in channel shape of the same section as the side sill, being located at the joint between the upper and the lower side sheets. The side plate is formed in much the same shape as the side sill, but, in this case, the top flange is straight and the lower flange is sloped downwardly. The side plate is continuous the entire length of the car, being joined to the side sheet with intermittent welds.

The side stakes are formed in channel shape, seven per side. All but the bolster stakes are rectangular in section. The bolster stakes have their flanges towards the end of the car at an angle to provide for clearing the lading.

The cross ridge extends across the car in one piece, with a gusset pressing of approximately the same cross section at the sides. The cross ridge gusset is formed of 4-in. standard pipe, extending from the side plate through the cross ridge to the center sill. Longitudinal bracing is provided by two pieces of 4-in. pipe at 60 deg., extending from the side-sheet stiffener to the cross ridge gusset.

The corner posts are structural angles joined to the end and side sheets with intermittent welds on the outside and continuous welding inside the car. The end posts are structural channels joined to the end sheet with continuous welding. The end sill is a structural angle welded to the center sill and to the end and corner posts.

Three hopper doors are provided per car, instead of six, as is the usual practice. Each door is made of ¼-in. steel plate, with channel-shaped stiffeners welded to it with intermittent welds. The doors are arranged for the application of hooks for holding them in the closed position. The hopper-door hinge is a new type, being continuous from the side to the center sill on each side of the car.



The Interior Construction of the All-Welded Hopper Car—Patents Are Pending on a Number of Features Embodied in the Construction of These Cars

Truck-Competitive Cotton Rates Authorized

WASHINGTON, D. C.

TO ENABLE the railroads to meet the increasing competition of trucks for shipments of cotton, the Interstate Commerce Commission has issued a supplemental report containing modifications of its report of July 15, 1930, in the cotton rate investigation case, and postponing for an experimental period to June 25, 1932, the effective date of the order in so far as it requires the maintenance of a relation between the rates on cotton to Houston, Galveston, and Texas City, Tex., from points of origin in Oklahoma, on the one hand, and from points of origin in Arkansas and Texas, on the other hand; and between the rates on cotton from points in Southwestern territory to Mobile, Ala., on the one hand, and to the Texas ports on the other.

This will give the railroads an opportunity to maintain rates lower than those prescribed, where such action is necessary to meet truck competition, without maintaining the relations prescribed between such rates and rates from and to points where corresponding reductions are not made necessary by truck competition. Material reductions have already been made in some of the rates to the Texas ports for this purpose and the railroads desired to continue to make rates upon a truck-competitive basis, lower than the maximum rates prescribed in the original report which were to have become effective on June 15. The commission, upon petition, reopened the case for further hearing and has now authorized the roads to make experiments with the rates for a period of about a year, provided the reduced rates are not less than 65 per cent of the maximum reasonable compressed-in-transit rates prescribed in the order minus the compress charge, and the commission expects to retain such control of the situation as may be necessary, either in formal complaint cases or by suspension of tariffs on its own motion or upon protest and the showing of sufficient cause.

The transportation of cotton by motor truck in quantities sufficient to be of material concern to the railroads has developed only within the past two or three years, the report says, "but with the construction of new roads and the improvement of old ones it has increased by leaps and bounds so that at the present time it has become a grave menace to the rail carriers and has resulted in a situation which they describe as desperate." The territory in which the trucks operate has been gradually extended until during the season of 1930-1931 they have transported cotton to the ports from points in Texas up to 525 miles from Houston by road, at rates ranging from $2 to $2.50 per bale. During the season up to January 31, a total of 1,138,935 bales, or 24.25 per cent of all the cotton arriving at the Texas ports, was transported by truck, and a railroad witness estimated that within the territory in which the trucks are active they are getting fully 50 per cent of the business. An abstract of the report follows:

The Railroad Commission of Texas is vested with a limited measure of regulatory power over truck transportation, but the great bulk of the cotton which is transported by truck moves at rates fixed by private contract between the shipper and the truckman, to which the state commission's regulatory authority does not at present extend. Such rates fluctuate with the circumstances attending each movement and by reason of their instability they provide a character of competition which it is very difficult for the rail carriers to appraise and meet. There are now pending in the

(*Continued on page 914*)

Transport Competition Discussed

Round-table conference held in connection with the annual meeting of the Chamber of Commerce of the United States

REPRESENTATIVES of rail, highway and waterway interests engaged in lively debate in their discussion of "What Is Fair Competition in Transportation?" at a round-table conference held at Atlantic City on April 29 in connection with the annual meeting of the Chamber of Commerce of the United States. While the program called for discussion of all forms of transportation there was no appearance for the air transport interests nor did any consideration of air carriers as competitors of other agencies enter the debate.

The discussion was opened by Thomas F. Woodlock, contributing editor of the Wall Street Journal, who read a paper outlining principles with which transportation practice should correspond. These principles Mr. Woodlock found to be as follows: (1) That the public is entitled to any form of transportation which is better or cheaper—or both—than are existing forms; (2) that in general, those who use transportation should pay for the service without any assistance from others; (3) that the public is not obliged to support any form of transportation that cannot economically justify itself by paying its own way and paying it in full.

With the discussion opened by Mr. Woodlock's paper, the chairman—Thomas J. Watson, president of the International Business Machine Corporation,—invited discussion, first from those who, according to the program, had "agreed to take part in the discussion under the five-minute rule." The "five-minute rule," however, was little honored as most of the participants proceeded to read prepared papers attacking the recent railway declaration of policy and consuming from 20 to 45 minutes' time each. In his brief rebuttal to some of the highway and waterway arguments, F. J. Lisman, investment banker of New York, described the procedure as "a masterful counter-attack, by dodging the issue."

Waterway Advocate Champions Railways

A significant feature of the conference was the address of John H. Small, former president of the National Rivers and Harbors Congress. Mr. Small said that he had been a promoter of waterways but he nevertheless rose "to say a word on behalf of the railroads" since "the time has come when the American public should have appealed to their sense of justice the plight of these railroads." Every possible phase of regulation assumed to be in the public interest has and is being applied to the railroads, he continued, as he issued the warning that if competition continues on the present basis every short-line railroad will be forced to make application for abandonment. Railway competitors, Mr. Small concluded, must be regulated on the same basis since the best interests of the country will only be served by preserving the railways in their integrity. He pleaded for a discussion of the subject "in terms of justice and public interest and not in terms of partisanship."

Address of Thomas F. Woodlock

Mr. Woodlock's remarks, discussing the application of the three principles set forth above to existing agencies of transportation, follow in part:

In this country we employ five means of transportation—rail, highway, water, air and pipe-lines. Each, no doubt, has its place in our economy. The place of each determines itself actually by competition. The problem is to discover the rules necessary to make and keep that competition fair. Each form of transportation is entitled to such place as it can win and hold by fair competition, none is entitled to special protection or subsidy; each is entitled to a fair field, and the field of each is that in which it can render better and cheaper service than can the others. The problem is to discover those fields to the end that all forms of transportation may be employed to best advantage of the public, including those who own and operate and those who use them. One thing, however, must be kept clearly in mind. All forms of transportation, other than rail, compete *selectively*; that is, they compete for certain classes of business only and not for all, and they do not hold themselves out as do the railroads to furnish a complete service at all times. This fundamentally differentiates their cases from that of the rail, and if the public is to have a complete service it must pay for that service.

Railroads, of course, are and always must be our principal means of transportation. Of all the freight that moves within our borders at least three-quarters moves on the rails. Railroad transportation fulfills the second requirement just stated—that is, it pays its own way. It receives no subsidies and has no revenue beyond what it receives in fares and charges. It pays all its own costs—operating, maintenance and depreciation of plant. It does, this, moreover, under strict regulation by public authority which controls its rates and charges, its security issues, its extensions and abandonments of plant and services, and many of its actions and practices with respect to its patrons. Up to within a very few years railroad transportation enjoyed almost an exclusive field in the United States except for Great Lakes shipping.

Highway transportation for profit and on a tremendous scale is the new thing. So, too, is highway transportation for convenience. We are provided today with sufficient passenger-car capacity to permit every human being in the country to take the road at the same moment. And we are not far short—if, indeed, we are short at all—of the highway capacity necessary to permit them to do so.

Who should pay the cost of these highways—their maintenance and amortization? Should all that cost be assessed upon the many? If not, how much? And how should it be assessed? These are the first questions that must be answered if we are to judge as to whether the competition of the highway with the rail is fair competition, and whether it is paying its way. We have all kinds of highways. We know that the respective proportions of weather-wear and use-wear vary with the type of highway, its location with respect to climate, and the weight and speed of the vehicles that use it. The British Royal Commission on Transport in its final report recommended that two-thirds of the annual cost of highway maintenance should be assessed on the motor traffic and one-third on the general taxes. The Commission admitted that this division was not based upon any dependable statistics. I believe that I am safe in saying that we have not as yet fully available in this country the information which would enable us to allocate with certainty the cost of highway maintenance to the traffic responsible for the wear in exact proportion of wear to use.

But we can with much confidence recognize as a principle that, speaking broadly, the costs of highway maintenance, including interest and amortization, should be assessed upon the motor vehicles that use the highways to the extent that these costs can be allocated to wear destruction by use as against deterioration by weather. Wear by use is mainly determined by weight and speed in accordance with the well-known formula expressing momentum and impact. Momentum can be modified to some extent by means of springs and elastic tires. It is worth while, however, to note that with increase in weight little relief can be obtained from springs and not very much from increase of tread in tires. Whether damage done to the highway varies exactly with impact is, no doubt, debatable, but it is certain that impact is a very important factor in damage.

Now, if we are to aim—as I think we should—at assessing upon each class of motor vehicle that uses the highways its proper share of highway maintenance costs, we shall find that it provides us with a key to the really important question—namely, under what conditions of speed and weight is motor transportation economical as compared with railroad transportation? Speed, it must be remembered, is largely determinant of economic radius of operation.

Could we ascertain within limits of reasonable accuracy, as I think we can by careful tests, the various amounts of damage done to various classes of highways by the various classes of motor-vehicles at various rates of speed, together with the deterioration of the various classes of highways by weathering under the various climatic conditions obtaining in this country, we should have most of the data necessary to a proper allocation of highway maintenance costs over buses, motor cars and motor trucks in proportion to their destructive effects. Combining with those the data, equally ascertainable, of the operating cost, including maintenance, repairs and depreciation on each class of vehicle, we should be able to arrive pretty closely at the true cost of transportation by each class for a given number of miles run. And we could determine whether or not such transportation by each class was cheaper than transportation by rail and at what limits of weight and speed it became or ceased to be cheaper. Furthermore, we could—and should—place limits upon both weight and speed at those points where transportation ceased to be economical, for there is no sense in permitting, much less encouraging, the use of uneconomical transportation.

Highways in modern times, since invention of the railroad, have mainly been used for private convenience rather than for common carrier service. It was with this general purpose in view that they were constructed. It seems not unreasonable that those who use them for common carrier service and profit should pay a special tax for that privilege in addition to paying their full share of maintenance costs.

I permit myself a guess and that is that much of the present transportation of passengers by motor bus and of freight by motor truck is, in fact, when charged with all the costs properly attributable thereto more expensive than transportation by rail, and that this is particularly true of long distance transportation, and I permit myself the suspicion that at least a part of such transportation is, in fact, conducted at a loss to those who are conducting it owing to their neglect of the element of depreciation prior to its becoming complete.

If my reasoning thus far is correct, the logic points to weight and speed limit as the factors by which taxation for highway maintenance should be controlled—with, of course, a strict enforcement of speed limit. Consumption of gasoline has no necessary relation to either. It is a most convenient form of taxation and no doubt should be preserved, but the problem of taxation must be approached, if it is to be satisfactorily solved from the other angle.

There remain the other questions, mainly of regulation, other than that under the mere police power to insure safety and order. Shall regulation be mainly state or Federal? Shall all carriers for hire be regulated, contract and common? Shall this regulation include rates? Shall carriers be required to apply for certificates of convenience and necessity both intra- and interstate? Shall they be compelled to file regular reports? Other questions of detail will naturally suggest themselves in discussion.

You will not expect me to do much more than state these questions. I assume that it is largely interstate traffic that is important. The Federal Government necessarily is supreme in that field to the extent that it chooses to occupy it. Thus far it has left it entirely open. The state has complete powers within its own borders.

I believe it to be desirable that such regulation as is found to be necessary should be conducted by the state to the limit that state powers are effective and that as little as is possible should be left for the Federal Government to do in that way. I am not prepared to suggest in any detail the lines of division between the two zones.

As to the matter to be regulated, it seems to me clear that common carriers should be controlled as to rates, at least so far as their publication is concerned, and they should be held to published rates to prevent discrimination. Whether they should be controlled as to the measure of the rates—that is whether maxima should be prescribed, would I think, depend upon whether exclusive routes were granted under the "convenience and necessity" principle. If this principle be not observed—I think it should—and the highway is to be open for competitive hauling, it would seem that no necessity would exist for regulation of the measure of rates. It is obviously desirable that common carriers for hire shall file regular reports of their operations and finances.

As regards contract carriers the case is not so clear and I am not prepared to offer an opinion as to the scope of regulation desirable in their case, further than to repeat that those who use the public highways for profit may properly be taxed for that privilege over the above taxation for costs of maintenance. And it may well be questioned whether the interstate comity as to license tags should include commercial tags.

There remains the question as to what relaxation of railroad regulation is necessary to put the railroads upon even terms with their highway competitors. It seems to me that for light upon this point we must consult principles and follow the logic that they suggest. Just as we started with the inquiry concerning the *economy* in highway transportation—if any—we may appropriately follow the same line of questioning with respect to the *economy* in rail transportation in the expectations that it will give us a key to the answer.

We know that density of traffic is the main factor in determining whether or not it will pay to construct a railroad. We know that about one-quarter of the railroad mileage shows a density of freight traffic of less than 200,000 ton-miles per mile of road per annum. We know that a large part of this mileage consists of branch lines built upon the theory that they would be "feeders" to the main lines. And we know that the transportation furnished by these lines is uneconomical in that it costs more than its brings. We know, too, that it is mainly short distance transportation. It seems to me that it follows inevitably that this transportation, passenger as well as freight belongs naturally to the motor vehicle—running either on the rails or on the right of way where the rails have lain and that the railroad is the natural agency to operate these motor vehicles, if it cares to do so. And it further seems to me that wherever the railroad company sees its way to substitute motor vehicles transportation for train-transportation at a saving of cost or a gain in efficiency, or both, it should be allowed to do so. In short the railroad is fairly entitled to protect its own business by meeting such competition *as it can economically meet.* Regulatory policy should recognize this as a principle and modify regulatory practice so far as is necessary to give effect to the principle.

The facts with respect to our internal waterway systems are well-known to everyone in this room, and I shall repeat neither them nor the arguments which naturally arise from them. Rather I propose a realistic approach to the matter and the one question which that approach suggests. Let us take facts as they are—the internal waterways as they are, continued and maintained at public cost and let us forget the cost both of construction and maintenance. Let us take the law as it is—the Denison Act included—which opens these waterways to anyone who cares to put tugs and barges upon them and ply for trade, and in addition gives him joint rates and through routes with rail carriers on a fair division basis over any reasonable route. Let us admit that rightly or wrongly, fairly or unfairly, the barge line competition possible under these conditions is here to stay—if it can. If a barge-line operator can buy tugs and barges, can buy or lease terminals, and can operate as a common carrier on these waterways so as to get out of the business his operating costs, his taxes and a return on the capital invested in plant—all this in competition with rail or highway carrier—his competition is, apparently, to be considered economically justifiable. In any event it is going to be maintained as a permanent possibility. I see no likelihood of tolls ever being assessed on river transportation nor do I see any likelihood that water-borne transportation will ever be required to bear the costs of maintenance channels, much less interest on their construction costs. In the circumstances the question whether competition of this sort is fair is moot.

A question, however, which is not moot is whether the Government of the United States is a fair competitor with its own citizens when it operates a barge line upon these waterways as a common carrier. I shall do no more than state that question. The facts are known to all, and are not in dispute.

There is the question of the competition of coastal and lake shipping and shipping operating inter-coastly through the Panama Canal. This is largely a question of rate regulation. Should coastal and inter-coastal lines be required to file tariffs with the Interstate Commerce Commission, and should the Commission have authority over their rates? Dissolution of the intercoastal conference has left those rates in a completely chaotic state with the result that traffic such

as is being diverted from rail carriers, is being carried at a loss—that is, wastefully. The Panama Canal has exercised since the War a profound influence upon railroad traffic; should it be definitely fitted into the country's transportation system through regulation of rates? If I may express an opinion of my own, I think it should—if, for no other reason, that such a step is a desirable preliminary to a proper settlement of the vexed question of fourth section relief for the transcontinental rail carriers. This consideration is not pressing the case of the coastal and lake shipping. I admit that this phase of the subject is difficult and that opinions widely differ, and in expressing opinion at all I have certainly no wish to seem dogmatic.

The Congress has in the Transportation Act, Section 500, made clear its policy "to promote economy and develop water transportation service and facilities in connection with the commerce of the United States," but in the same breath added "and to foster and preserve in full vigor both rail and water transportation." Just what those words may mean when translated into action I shall have to leave to others to explain. The Interstate Commerce Commission has interpreted them to mean that a barge-line certificate of convenience and necessity was not to be granted or withheld upon the same consideration as those which would govern in the case of application of a rail carrier for new construction. I wonder why! I now wonder all the more because I concurred in that decision myself! With which confession I leave the waterways.

As to airways as new competition in transportation, it seems to me that the railroads should be free to make use of the air when, as and if, they find it can be coordinated usefully and economically with their own service—and when I say "coordinated" I mean coordinated in the proper sense of the word; that is, a feeding into and out of railroad service in such a way as to increase or protect railroad service and revenues.

There remain the pipe-lines. These present a real problem, now that they are entering the field of distribution of products in consumable form. Until recently pipe-lines for transportation of crude oil might perhaps fairly be considered as mainly plant facilities, notwithstanding the large distances over which they operated. Now, however, as distributors of gasoline they take on a different character. They are theoretically common carriers and are so recognized by the law. Great practical difficulties, however, confront their functioning truly in this way and, in fact, no one seriously expects them to do so. Such is certainly not the intention of those who are already using them and who are planning a wide extension of that use. They constitute a serious threat to what has been and still is a source of very remunerative rail traffic; notwithstanding the effect of the refinery competition upon rates. There is nothing in the available evidence to indicate that, given a sufficiently large and steady volume of traffic, transportation of oil and gasoline by pipe-lines is not, at least, as cheap and efficient as any other form of transportation. Pipe-lines pay their way as they go. It is fair competition, so far as we can see, in that sense of the word, and the rail carriers must meet it as best they can, without expecting that any hindrance of an artificial kind shall be placed upon the pipe-lines. Liberality in the grant of fourth section relief to enable them to meet competition where there is competition seems one thing to which they are reasonably entitled. Perhaps the right to purchase or build pipe-lines as feeders might be valuable under certain circumstances.

If the time should come when it is mechanically practical for the pipe-lines to function as real common carriers for many and small shippers of gasoline, their rates will become of importance and should, of course, be subject to strict regulation. That time, however, has probably not yet arrived. These are venturesome spirits who believe that this kind of transportation will be adapted in time to other commodities. When that time comes the same general principle will apply.

In closing this summary outline of the subject that we are to discuss, may I reiterate the thought with which I began—that the only safe guide available through the maze of facts is principle, and that however complex the facts may be—and are—the principles that determine the fairness of competition are neither obscure nor many. Let us hold fast to them for they are Arachne's thread to lead us through the labyrinth.

Truck Merely Tool of Business

T. R. Dahl, vice-president of The White Company, was the first participant in the discussion. He called attention to the value of the motor industry as a customer of the railroads and pleaded for a more temperate discussion of the competitive situation. Impassioned discussion is ever futile, Mr. Dahl pointed out, as he suggested that the difficulty lies in the fact that the contending interests have never started from a major premise on which they could agree. This latter, he continued, is particularly true with respect to motor trucks. He quoted statistics showing that the great bulk of trucks are privately owned—and contended that they are purely tools of business; are nothing but big horses and wagons.

Equal Treatment for All

Fitzgerald Hall, vice-president and general counsel of the Nashville, Chattanooga & St. Louis, spoke briefly in submitting a brief on the subject under discussion. This brief, prepared by Mr. Hall and R. N. Van Doren, vice-president and general counsel of the Chicago & North Western, was, in addition to the roads of its authors, concurred in by the Illinois Central, the Chicago, Milwaukee, St. Paul & Pacific and the Atchison, Topeka & Santa Fe. Mr. Hall, in response to Mr. Dahl, suggested, as one major premise on which all could agree, that every business is entitled to equal treatment under the law. Railroads as compared with motor carriers, he held, pay 400 per cent more in taxes when it is considered what each gets in return. Heavy highway vehicles, Mr. Hall contended, should pay all the added highway costs which they make necessary. He pointed out that only one per cent of the vehicles require highways of the standards now being built. On this point Mr. Hall's brief quoted from the writings of Charles F. Mervin, Jr., mechanical engineer, United States Bureau of Standards, in part as follows:

> Roads designed to carry three-ton vehicles without undue deterioration would be satisfactory for about 95 per cent of the vehicles in use today. To accommodate four of the remaining five per cent, roads of double this strength would be required, while to be correspondingly safe for the heaviest group, weighing up to 15 tons and constituting about one per cent of the total number of vehicles, roads from three to five times as strong would be necessary.

George C. Lambert, chairman of the executive committee, Mississippi Valley Shippers Conference, continued the discussion with the reading of a paper on waterway transportation. He held that transportation is designed to perform the task of restoring equilibrium as between producing and consuming areas; thus fair competition is co-operation in making available to all sections every form of transportation.

Ivan Bowen, general counsel of the Greyhound Lines, opened his address with reference to the land grants received by western railroads and to incidents in the financial history of the carriers. He conceded that the land-grant roads were forced to carry government business at reduced rates but held that no railroad would like to lose this traffic even at such rates. He charged that in recent legislative proposals it was sought to make required specifications for highway vehicles so diversified that such carriers could not operate from state to state. Railroads, Mr. Bowen held, subsidize their passenger business out of freight revenues and, through recent fare reductions, they have dumped passenger transport on a stagnant market in order to ruin their highway competitors.

S. A. Thompson, secretary and treasurer of the National Rivers and Harbors Congress, recounted alleged instances in which railways, by retaliatory measures, had stayed the development of carriers on the inland waterways. Under the railway program, he said, the highways and rivers would no longer be public highways.

Here F. J. Lisman spoke on behalf of the railroads and called attention to the fact that no one had mentioned taxes paid by carriers other than railroads. The government, Mr. Lisman said, in one way or another, is subsidizing the Inland Waterways Corporation to the extent of about $1,000,000 a year. Mr. Lisman predicted a bright future for the bus and truck in their proper field; he suggested to motor interests that the situation would be aided greatly if they would confine their sales to responsible purchasers of buses and trucks.

R. H. Aishton, chairman of the American Railway Association, compared the railway declaration of policy with the transportation principles enunciated by Mr. Woodlock and found them identical in meaning. He decried the misunderstanding and distortion of the railway declaration, which he held to be merely a simple statement of fact. The problem, as Mr. Aishton sees it, is to decide what is needed in a co-ordinated system of transportation. He cited utterances of waterway and highway interests favoring their own regulation. As to the Inland Waterways Corporation, he saw no difference between its operation by the government and the government's entering retail trade in a tax-free, rent-free store in competition with private merchants.

A. J. Brosseau, president of Mack Trucks, Inc., said that in 21 states the users of the highway pay all its costs while in the others they pay a large part and soon will pay all. He thought that common carrier buses should be regulated, but held that motor truck transportation has not developed into a system comparable with rail transport. If such a system developed, Mr. Brosseau would regulate it as railways now are regulated but he concluded that we have nothing like a system of truck transport at present.

M. J. Sanders of New Orleans, who described himself as a "dollar-a-year man" assigned to the organization and operation of the government barge line during the war, defended the government venture into the transportation business in competition with its own citizens. Railroads, he said, are entirely too strong for private barge lines to attempt to compete with them. Joint rail-barge rates, he continued, will bring the benefits of "cheap transportation" to taxpayers located at points remote from the rivers. The only determined enemy of the waterways, is the railways, Mr. Sanders asserted, and the government cannot safely get off the river until the railroads show a change of heart. Waterway costs, this speaker concluded, should be calculated with the potential capacity of the rivers as a base.

S. T. Bledsoe, general counsel and chairman of the executive committee of the Atchison, Topeka & Santa Fe, advocated transport regulation in the public interest —not in railroad or any other special interest. Such regulation should be applied to prevent discrimination, Mr. Bledsoe said, as he predicted that common carrier buses and trucks will soon be seeking regulation. As to waterway traffic he called attention to the fact that there is no regulation except as to joint rail-water traffic; shippers over the waterways are deprived of routing privileges after they deliver freight to a barge line. In a closing reference to land grants Mr. Bledsoe said that its land grant was the most expensive thing his road ever received.

The final speaker—George P. McNear, Jr., president of the Toledo, Peoria & Western—discussed the effect of joint rail-barge rates on the revenues of the railways of the Middle West. Spontaneous applause interrupted his remarks to greet his suggestion that the Chamber of Commerce adopt a resolution recommending the retirement of the government from the transportation business on the inland waterways.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 25 amounted to 759,272 cars, a decrease of 730 cars as compared with the preceding week. This was also a decrease of 147,607 cars as compared with the corresponding week of last year and of 292,613 cars, or 27 per cent, as compared with 1929. Loading of grain and grain products showed a small increase as compared with 1929 but all other commodity classifications and all districts showed reductions as compared with both years. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, April 25, 1931

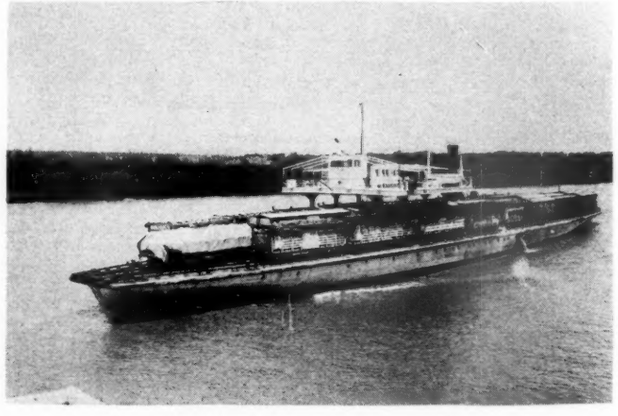
Districts	1931	1930	1929
Eastern	181,877	210,476	254,156
Allegheny	153,085	184,927	217,745
Pocahontas	41,735	52,898	55,342
Southern	120,061	136,812	151,976
Northwestern	88,164	112,780	151,209
Central Western	108,656	131,760	140,707
Southwestern	65,694	77,226	80,750
Total Western Districts	262,514	321,766	372,666
Total All Roads	759,272	906,879	1,051,885
Commodities			
Grain and Grain Products	37,449	38,778	36,878
Live Stock	23,148	27,383	31,064
Coal	112,806	139,587	164,661
Coke	6,215	9,929	12,705
Forest Products	32,647	58,669	71,592
Ore	9,367	15,371	54,126
Merchandise L.C.L.	224,132	247,354	264,058
Miscellaneous	313,513	369,808	416,801
April 25	759,272	906,879	1,051,885
April 18	760,002	892,706	1,005,880
April 11	737,934	911,316	973,152
April 4	728,511	908,059	958,225
March 28	740,079	885,324	969,196
Cumulative total, 17 weeks	12,251,758	14,888,144	16,142,670

Car Loading in Canada

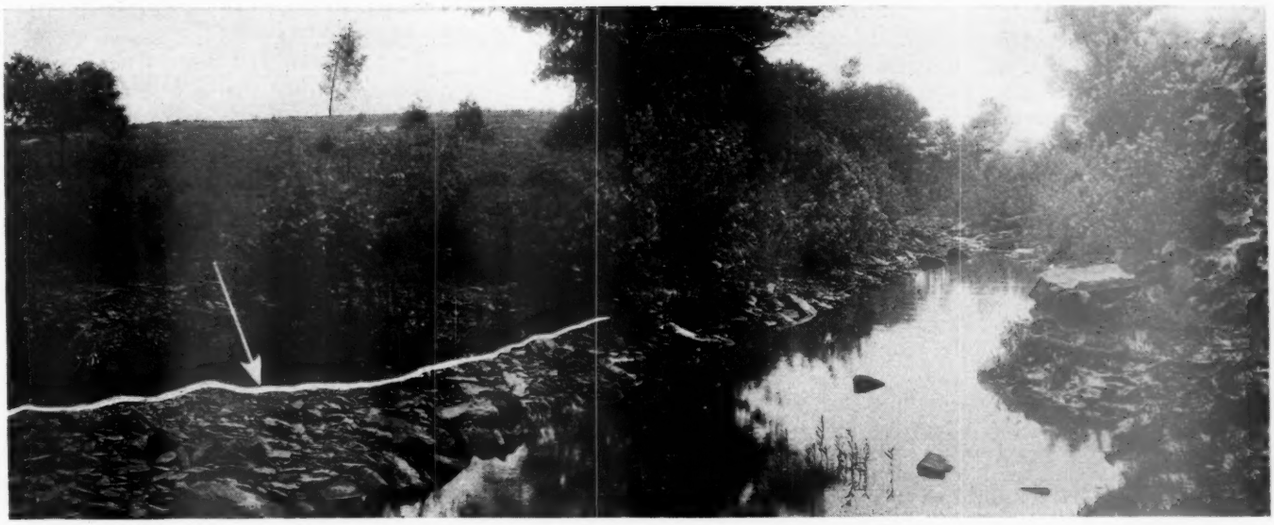
Revenue car loadings at stations in Canada for the week ended April 25 totalled 50,368 cars, an increase over the previous week of 1,642 cars but a decrease of 6,390 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
April 25, 1931	50,368	30,896
April 18, 1931	48,726	29,138
April 11, 1931	49,714	27,924
April 26, 1930	56,758	33,964
Cumulative Totals for Canada		
April 25, 1931	801,925	482,567
April 26, 1930	964,643	622,531
April 27, 1929	1,066,699	738,677

* * *



A Diesel Car Ferry, with a Capacity of 34 Cars, Operated on the Parana and La Plata Rivers between Ibicuy and Buenos Aires, Argentina, by the Entre Rios Railways



Pool in a Stream That Has Ceased to Flow—Arrow Indicates Normal Flow Line

Water Supplies Reach Danger Line

Recent drought practically exhausted railway reserves and seriously impaired quality for locomotive use

OVER the greater part of the United States the drought of 1930 was the severest in history. Not only was there an unprecedented lack of precipitation, but over wide areas this deficiency was accompanied by an abnormally hot summer that was particularly severe in the central and eastern sections of the country. In nine states new records for high temperature were made in July, while two others equaled previous high records. Eight states established new temperature records for August and two equaled previous records for this month. Other outstanding features were the length of the abnormally warm period and the duration of the drought itself.

As a result of the long continued and widespread deficiency in precipitation and the extended period of high temperatures, railway water supplies were particularly affected, both as to quantity and quality. Many streams dried up completely; in others the flow was greatly diminished; there was a marked recession of the water table in many of the deeper subsurface supplies, and this was particularly noticeable where the water was obtained from springs or shallow wells; while owing to excessive evaporation, the loss in ponds and impounding reservoirs was out of proportion to the amount of water drawn from them.

In some cases the supply failed entirely. In many others where it did not fail completely it was constantly at or below the danger line so that it was necessary to "run" certain stations, except for emergency purposes. At still other water stations, at which the supply was at all times adequate, low stages in streams, especially those that were polluted with industrial or mine wastes, had a decidedly adverse effect upon the quality of the water which, in some cases, became highly corrosive. To a less degree, trouble was experienced with waters containing sewage and other organic wastes. Because of lack of natural dilution, the concentration of scale-forming solids increased materially in many of the supplies which were not subject to artificial pollution.

Extent of Drought

To get a clear idea of the conditions with respect to both surface and subsurface supplies, it is desirable to review the climatological conditions of the year. Over a part of the area affected, the drought started in the latter part of November or early in December, 1929, and began to be acute early in the spring of 1930. Beginning with February, precipitation declined over the country as a whole, until in July it was 37 per cent below normal, and in August there was a deficiency of 25 per cent. During the fall months, for the country as a whole, there was an increase in rainfall to 12 and 17 per cent above normal for October and November respectively, although in some of the states most affected by the drought, the precipitation ranged from 25 to 57 per cent of normal in October and from 48 to 77 per cent in November. December was the driest month of the year, however, the precipitation during the month being only 57 per cent of normal, while in some of the states this percentage ran as low as 32 to 42.

For the entire year, 40 states had less than normal rainfall, while in 20 of these states 1930 was the year of lowest annual rainfall of record. Maryland, West Virginia, Virginia and Kentucky were relatively the driest states for the calendar year with 56, 59, 60 and 61 per cent respectively of the normal rainfall, this precipitation ranging from 20 to 30 per cent below any previous low records.

For the six months' period from March to August, inclusive, the spring and summer seasons combined were the driest on record in Missouri, Illinois, Indiana, Ohio, Kentucky, West Virginia, Virginia, Maryland and Penn-

sylvania, the rainfall in these nine states being only 58 per cent of normal. So far as Ohio, Indiana and Illinois are concerned, however, this statement does not give a true idea of the situation, since there was relatively much more rain in the northern sections of these states and a correspondingly greater deficiency as the Ohio river was approached. For the summer only, Arkansas was the hardest hit, with but little more than one-third of its normal precipitation. Kentucky followed with 44 per cent; Mississippi with 47 per cent and Maryland and Delaware with 48 per cent each.

High Temperature Records Established

To make matters worse, the summer was abnormally warm in the central and eastern states. A prolonged period of extremely high temperatures began in the Southwest soon after the middle of June. This had spread to the Missouri and lower Mississippi valleys by July 4, and to the Ohio and Potomac Valleys a few days later. In most of the states affected, a permanent break in the hot wave did not occur until about the middle of August.

During this period, there were an unusually large number of days of extremely high temperatures, 24 states reporting temperatures of 100 deg. or higher on from 20 to more than 100 days. Texas reported 111 days, while in the central section where the deficiency in rainfall was greatest, the record was as follows: Arkansas, 77 days; Mississippi, 51; Missouri, 50; Tennessee, 48; Kentucky, 41; Illinois and Virginia, 39 each; West Virginia, 37; Indiana, 28; Maryland, 27; Ohio, 23; and Pennsylvania, 20.

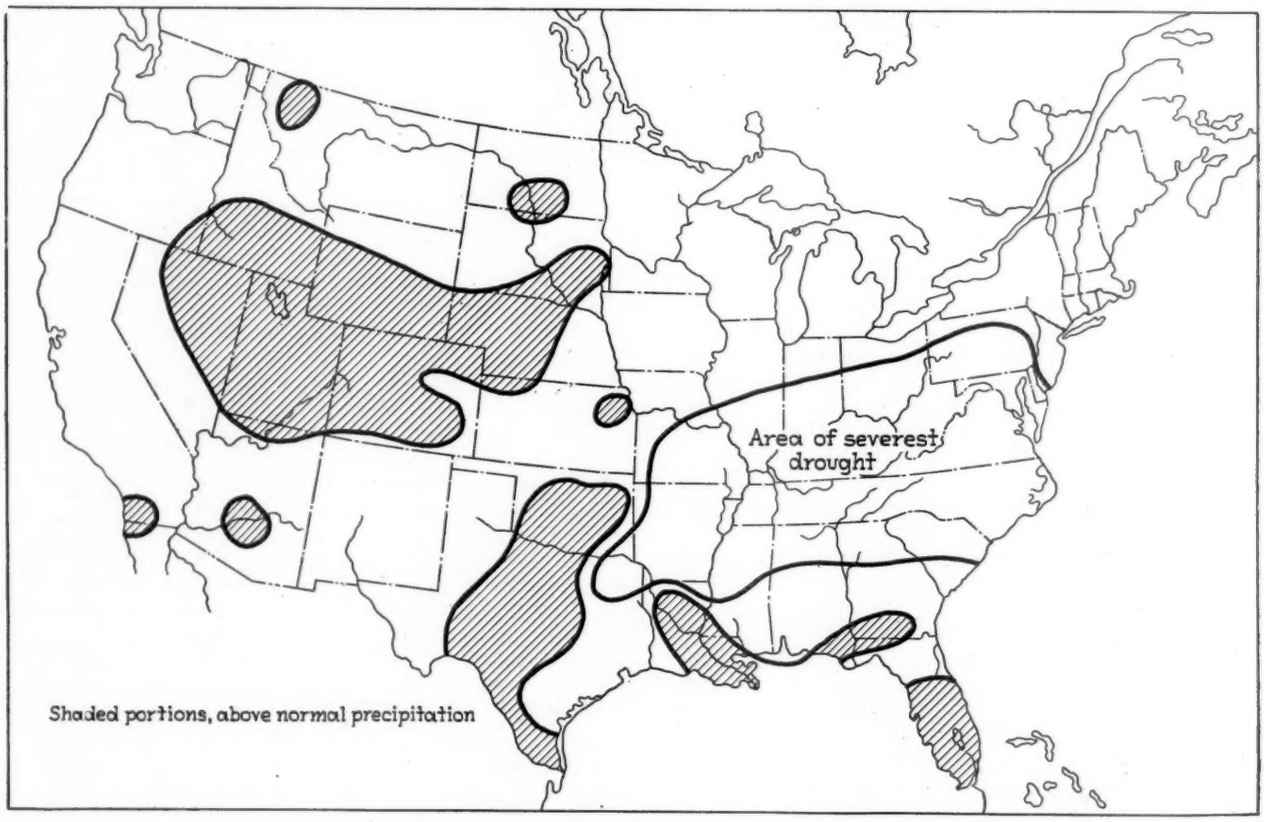
In addition to the prolonged hot spell, new records for high temperatures were established in nine states in July, those in the central and eastern sections being Virginia and West Virginia, 109 deg; Maryland, 110 deg.; and Mississippi, 115 deg. In August, eight states made new temperature records for that month, those in the severe drought area being Indiana, 108 deg.; Mississippi, 110 deg.; West Virginia, 112 deg.; Kentucky, Tennessee and Illinois, 113 deg.; and Missouri, 114 deg. Two states equaled previous maximum temperatures in July, while two others did the same in August.

Sources of Supplies in the Drought Area

Detailed information as to the effect of the drought on their water supplies has been obtained from 16 railways which operate a total of 32,668 miles of lines in the central section where the combined effect of the lack of precipitation and abnormal temperatures was the most pronounced. In this territory, these roads maintain 1,643 water stations, including those at which water is purchased. The water which they use is obtained from surface supplies at 1,048 of these stations and from wells or springs at 595 stations.

During the period of the drought there was a complete failure of the supply, as ordinarily obtained, at 66 stations where the source was in streams or reservoirs, and at 4 stations where the water came from wells. There was also sufficient recession to cause concern at 758 stations that were served by surface waters and at 262 of the stations that were dependent on subsurface supplies. These recessions varied from cases of ponds and reservoirs where a known amount of water was available and it was a simple matter to calculate the date of exhaustion, to partial failure of continuing supplies, such as streams which were expected to maintain a flow indefinitely, but did so at such a diminished rate that they did not provide sufficient water for current needs.

The situation with respect to underground supplies was somewhat similar, although they were less affected than the surface supplies. It was the general experience that there was a noticeable lowering of the ground-water level, although there were some exceptions. In many cases where there were no apparent signs of exhaustion, the pumping head was increased materially. The most



Distribution of Rainfall, 1930—Unshaded Areas Indicate Precipitation Less Than Normal

serious effect of the drop in the water table was on springs and shallow wells, and most of the failures and partial failures occurred in supplies of these types.

Emergency Measures

Emergency measures of some character, to conserve the supply at stations which were at or near the point of exhaustion, were necessary on every road except one in the area of severest drought. These measures ranged from the closing of certain stations for the remainder of the dry period to the development of other supplies. Only a few stations of minor importance were closed, however. In some instances, where it was not considered safe to abandon the stations, but where the supplies were totally inadequate, orders were issued requiring trains to "run" them, except in emergencies, and then to take only enough water to enable them to reach the next supply.

In numerous instances, where the supply was not exhausted, but was diminished to the point where it became inadequate to meet full requirements, all trains were permitted to take water, but the amount was restricted to what was absolutely necessary. In still other cases, 16 in number, where the stations could not be abandoned or it was impracticable to limit the use, water was hauled to eke out the supply. The periods over which this was done ranged from a few days, or intermittently for several months, to as long as 140 days.

Seven roads were compelled to seek other sources in order to continue the operation of 14 stations. In six of these cases, the solution was simple, as it was possible to obtain all of the water that was needed from the cities in which the stations were located. In one instance, however, to avoid restrictions on the amount to be used, the railway participated with the city in developing an additional supply.

In one case the amount of water available, which was obtained from a river, was ample to meet all requirements, but the quality became so bad that it was necessary to develop a new ground-water supply. In still another instance, a city was supplying the water for an important station. A partial failure of the city supply made it necessary to turn to a private water company, but it was not able to meet all requirements. The road then rehabilitated a group of wells which it had abandoned several years before. With this additional supply, and by placing severe restrictions as to use, it has been able to get along. Conditions at this point are still somewhat critical, since all of the water is obtained from shallow wells that are about 100 ft. deep, and the recent rains that have fallen in this vicinity have not replenished the ground water storage. In fact, the water table is still receding.

Other expedients included the placing of an additional engine tank or a tank car on some trains, to enable them to run between stations of ample supply and thus avoid the necessity of taking water at restricted stations. On the Chesapeake & Ohio, the use of large engine tanks having capacities of from 19,000 to 23,000 gal., was of considerable assistance in conserving the supply at restricted stations, since these tanks increased the safe distances over which the locomotives were able to handle full tonnage trains without taking water.

As an indication of the length to which it was sometimes necessary to go, in a few instances where dams were used to impound the water in streams, the available supply was increased by ditching to drain the pools above the dam into the main reservoir. In one instance, three portable pumps were installed to obtain a supply from a number of pools located below the dam. The water in the first pool was pumped over the dam, and the pumps then relayed the water from the lower pools, this operation was then repeated until all of the water was exhausted. Since the pools were replenished slowly by ground water seepage, this expedient served to avoid the necessity of hauling water from other points.

Only a 10-Days' Supply Left in this 500,000,000-gal. Reservoir on March 3

A Typical Experience

The experience of the Illinois Central was typical of that of most of the roads from which information was obtained. This railway operates 5,856 miles of road in the area that was affected by the drought. Water for locomotive use is supplied at 286 stations, at 123 of which it is obtained from wells, at 109 from streams, and at 54 from lakes or reservoirs. While there was a marked depletion in all of the surface supplies, actual failure occurred at only 13 stations, at most of which the normal consumption was relatively small.

As a result of these failures, water was hauled daily to one of these stations for 140 days and to another twice a week for 110 days. Four stations were closed for the period of the drought, as it was found that this could be done without reducing the tonnage of trains or incurring other inconveniences. At two stations, water was purchased from the cities in which they were located. As a result of emergency measures, the other five did not fail completely, but by restricting the amount of water taken to emergency requirements, it was possible to get through the dry period without complete exhaustion of these supplies. Several important supplies were so depleted, however, that they were practically at the point of exhaustion at the time the first considerable rains fell late in February of this year.

About 20 years ago this road began to build up its water supplies until it now has ample storage at a number of its most important stations to withstand as severe a period of drought as that of 1930. For this reason, it was able to, and did, furnish 1,805 tank cars, or approximately 17,200,000 gal. of water to municipalities, other railways and mines.

Cost of Emergency Measures

Some of the roads that furnished information as to the effect of the drought on their water supplies have not compiled figures to determine the cost of the emergency measures they were compelled to take. The Nashville, Chattanooga & St. Louis reports that its water supplies were not affected. Neither the St. Louis Southwestern nor the Norfolk & Western were put to any extra expense. The Mobile & Ohio was compelled to spend $5,000 in developing a new supply, but had no other extraordinary expense. It cost the St. Louis-San Francisco approximately $6,000 to haul water to two stations and to purchase water at four stations.

Including the cost of developing one new supply and hauling water to two stations, the Missouri Pacific was compelled to spend approximately $5,000 for emergency relief. For several weeks the Cleveland, Cincinnati, Chicago & St. Louis hauled water to one station at a

cost of about $70 a day. For a number of months this road also purchased water at two points, paying 2 cents and 5 cents a thousand gallons, respectively, in excess of what its own supply had cost.

An accurate estimate of the cost of relief measures was not made by the Chicago, Burlington & Quincy. At some stations where it had been possible to pump a full day's supply in eight hours, the depletion of the ground water made it necessary to decrease the rate of pumping and extend the pumping period. Extra pumpers were employed in some instances and in others, where power current was available, automatic control was installed, thus reducing the operating expense. The Chicago & Eastern Illinois hauled water to one station for more than a month at an estimated cost of about $22 a day. The total cost to the Illinois Central, including hauling and purchasing water from outside sources, amounted to approximately $4,000.

Effect on the Quality of the Water

Three roads reported that the drought had had no noticeable effect upon the quality of their water supplies, except in one instance on one road, and that no corrective measures had been necessary. All of the roads in the mining territory of the Ohio valley reported that their surface supplies were seriously affected by mine drainage in streams and in reservoirs fed by streams. In addition, many of the supplies were highly polluted by other industrial wastes from tanneries, pulp and paper mills, etc., and by sewage. This trouble was especially aggravated where the water was taken from the Ohio river. The remaining roads all reported a marked increase in the hardness of surface waters owing to lack of dilution by rainfall and surface runoff. In some instances the amounts of incrusting solids were double the normal content of the water. In only a relatively few cases was there a material increase in the hardness of underground waters, and these were generally confined to shallow wells and springs.

In general, where the water had not been treated previously, no corrective measures were applied. Where there was organic pollution, it was found expedient to use anti-foaming compounds with some of the water. Much of the water in the area of severest drought was already being treated, so that in most instances, the additional corrosive content of the water and the excess of incrusting solids were counteracted by a close check on the treatment and the use of boiler compounds. As stated, anti-foaming compounds were used to some extent, but, in the main, the foaming trouble caused by the increased amount of alkali salts was offset by additional blowing down of the locomotive boilers and more frequent water changes.

Effect on Train Operation and Locomotive Repairs

Six of the roads reporting said that train operation was not affected in any way by the shortage of water or its quality. One road was affected seriously for a time by excessive boiler foaming, but this trouble was eliminated by the development of a new supply at one station. The remainder of the roads had minor train delays as a result of more frequent stops for water or stops at stations where water is not taken under normal conditions. Other delays also occurred as a result of blowing down boilers at frequent intervals to minimize foaming.

Locomotive repairs were somewhat increased by the impaired quality of the water, some of the roads reporting this effect as merely nominal, but none of them has been able to segregate the costs that were directly chargeable to the effect of the drought. In some instances, where the increased cost of locomotive repairs was not appreciable, there were undetermined additional costs for washing boilers and changing water in the boilers more frequently to minimize foaming.

Prevention of Future Shortage

A number of the roads, particularly those that suffered the least, are of the opinion that the probability of a repetition of a drought of magnitude similar to that of 1930 is so remote that any expenditure to meet such a contingency is not warranted. Several of these roads reported, however, that they have under consideration, apart from any question of shortage in their supplies, certain developments looking to a better quality of water or to a reduction in the cost of furnishing the water.

Others, notably the Norfolk & Western, the Chesapeake & Ohio, the Chicago, Burlington & Quincy and, with respect to its more important stations, the Illinois Central, have pursued a policy for some years of developing supplies capable of withstanding the worst conditions heretofore known. In general, this group does not believe that a general policy of developing additional supplies is warranted. One road called attention, however, to the fact that, while many of its supplies had been ample to meet all needs up to the time the first heavy rains fell late in February, 1931, in numerous instances even the largest supplies were rapidly approaching the point of exhaustion at that time, while the situation is still critical at a number of points. The chief engineer of this road expressed his belief that the necessity for a sufficient factor of safety had not been emphasized properly in most cases of water development.

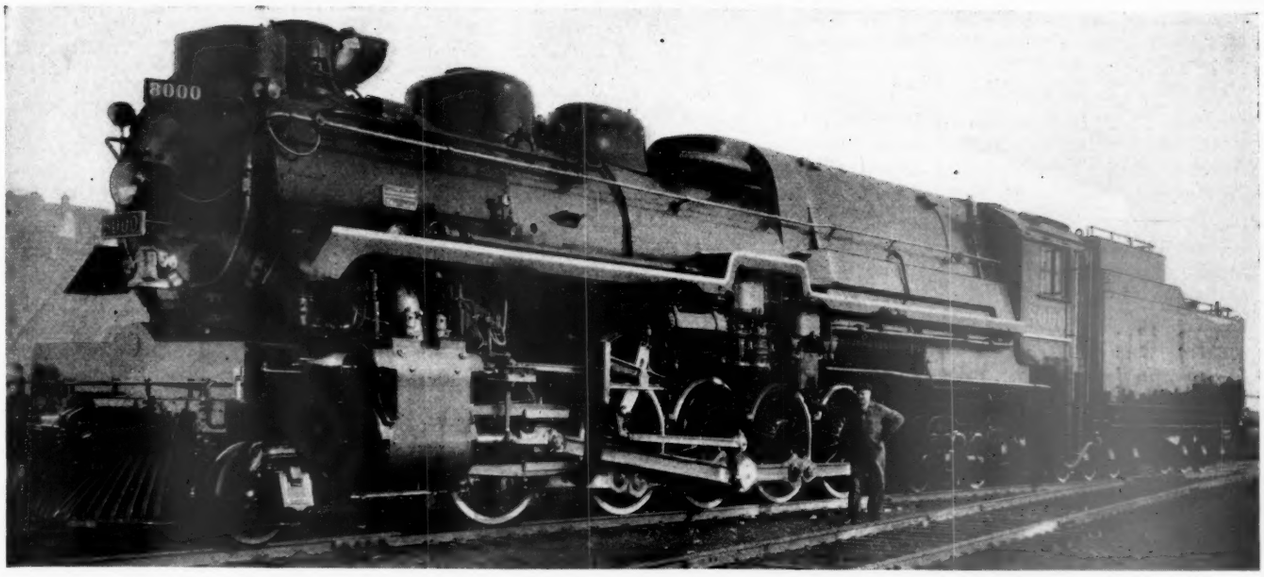
While it is too early for definite action to result from these experiences, still other roads are considering plans for developing supplies that will be not only ample to tide over a similar period of deficient rainfall, but will also be less subject to pollution during periods of diminished flow or inflow.

Court Hears Suit to Enjoin Grain Rate Order

(*Continued from page 898*)

approved as reasonable rates which are materially reduced by the current order.

The roads also state that grain and its products move freely under existing rates and that neither the volume nor freedom of movement would be increased by the required reductions, as a result of which the effect of the order is to materially reduce the revenues of the carriers from the only major classification of traffic, the volume of which has not declined. Since the close of the record in the case, changed conditions have been such as seriously to impair the credit and adversely to affect the marketability of the securities of the carriers in the Western district, and to threaten the maintenance of an adequate system of transportation. The petition asserted that the conclusion of the commission that the reductions would not harm the carriers were based upon checks and estimates of the revenue effects of the order and of supposed increases in revenue resulting in action in other cases, which, in addition to being outside the record, were erroneous in that the commission had under-estimated the losses resulting from the reductions required by the order, and had over-estimated supposed increases resulting from other cases.



Canadian Pacific Double-Pressure Locomotive Built at Its Angus Shops, with the Co-operation of the American Locomotive Company and the Superheater Company

C. P. R. Completes Double-Pressure Three-Cylinder Locomotive

Oil-burner built with Schmidt method of indirect steam generation—2-10-4 type with tractive force of 90,000 lb.

THE Canadian Pacific has completed the 2-10-4 type double-pressure locomotive which has been under construction during the past year at its Angus shops, and last week placed it on exhibition at the Windsor Street Station, Montreal, Que. The design of this locomotive was developed under the supervision of H. B. Bowen, chief of motive power and rolling stock, Canadian Pacific, with the co-operation of the American Locomotive Company and the Superheater Company.

This locomotive, No. 8000, is the sixth locomotive to be built with the Schmidt indirect method of steam generation, and the first of that design to be built and placed in service on this continent. A second locomotive of similar design is being built for the New York Central at the Schenectady, N. Y., plant of the American Locomotive Company. This locomotive, which is of the 4-8-4 type, is also being constructed with the co-operation of the builders, the Superheater Company and the railroad. A description of the construction of both locomotives will appear in a later issue of the *Railway Age*.

No. 8000 for Freight Service in Rocky-Mountain Territory

The No. 8000 will be subjected to a series of tests on the Canadian Pacific Eastern Lines after which it will be placed in freight service in the Rocky-Mountain territory for comparative operating tests with the road's No. 5000, class Tla 2-10-4 locomotives. These locomotives, which were built by the Montreal Locomotive Works, Ltd. in 1929, have a tractive force of 77,200 lb. They are equipped with Franklin boosters having a tractive force of 12,000 lb., making a total tractive force at starting for these locomotives of 89,200 lb. They have 25½-in. by 32-in. cylinders and operate at a boiler pressure of 275 lb. The driving wheels are 63 in. in diameter. The total weight of one of the class Tla locomotives is 452,500 lb., of which 312,800 lb. is carried on the drivers.

The No. 8000 exerts a tractive force of 90,000 lb. The driving wheels are also 63 in. in diameter. The high-pressure cylinder, which is located between the frames, takes steam at 850 lb. pressure. It is 15½ in. in diameter by 28-in. stroke. The middle connection is to a crank axle on the second pair of driving wheels. The two low-pressure cylinders, which are located outside the frames, are 24 in. by 30 in. and use steam at 250 lb. pressure. The total weight of the double-pressure locomotive is 485,000 lb. The tender weighs 300,000 lb. when loaded and has a capacity for 12,000 (Imperial) gal. of water and 4,350 (Imperial) gal. of fuel oil.

General Principles of the Design

The essential features of the Canadian Pacific No. 8000 are the same as the other locomotives designed with the Schmidt system of indirect steam generation that have been described in previous issues of the *Rail-*

way Age. The low-pressure boiler, which operates at a pressure of 250 lb., is of the conventional fire-tube type, and is constructed of nickel steel plates.

The high-pressure boiler is a seamless forged nickel-steel drum 41½ in. in diameter, 1¼ in. thick, and is made from a single ingot of steel weighing 32½ tons and in its finished condition weighing 8 tons. This drum is 25 ft. 2 in. in length and is centrally located above the entire length of the firebox. It is designed for a working pressure of 850 lb. per square inch.

The firebox unit is made up of six forged nickel-steel drums of small diameter, a hollow-forged nickel-steel firebox ring and 254 seamless steel tubes of various shapes and sizes. It is designed for 1,700-lb. pressure per sq. in. The average working pressure however will be around 1,350 lb. This unit is a closed circuit containing approximately 300 (Imperial) gal. of distilled water. The closed circuit or firebox unit extends into the high-pressure boiler drum in the form of 16 heat-transfer coils.

The water in the high-pressure drum is heated and is converted into steam at 850 lb. pressure. Steam from the high-pressure drum passes to the high-pressure cylinder. The low-pressure boiler generates steam at 250 lb. pressure which mixes with the steam exhausted from the high-pressure cylinder and flows to the two low-pressure cylinders. Steam from both the high-pressure and low-pressure portions of the boiler is superheated.

The locomotive is equipped with an Elesco feedwater heater which operates in conjunction with the low-pressure boiler. A single throttle lever actuates the high-pressure and low-pressure throttles as one.

Truck-Competitive Cotton Rates Authorized

(*Continued from page 904*)

Texas legislature bills embodying various proposals for more complete regulations of truck transportation within the state, but it is impossible to predict what, if any legislation, will actually be enacted.

The respondents have attempted to meet the truck competition by reductions in rates to the Texas ports from an area which has gradually increased as the zone of truck operations has been extended. At the present time, truck-competitive rates are in effect to Houston, Galveston and Texas City, for instance, from substantially all that portion of Texas south of an east-and-west line drawn through Dallas, Tex., and east of a line running north from San Antonio Tex., and southeast from that point to the Gulf. The last reduction shown of record was made on December 5, 1930, from a small territory immediately north of Dallas. The establishment of these rates has undoubtedly mitigated the rail carriers' losses of traffic to the trucks, but it is impossible to make any more definite statement than this, because the results have not been uniform.

The respondents estimate that if all the cotton moved by truck during the 1930-31 season had moved by rail at the standard rates they would have received thereon a revenue of about $2,800,000, and that if it had moved by rail at the truck-competitive rates it would have produced a revenue of approximately $2,000,000. In addition, respondents estimate that the revenue which they received on cotton which actually moved by rail at the truck-competitive rates was approximately $1,000,000 less than they would have received had they been able to charge the standard rates thereon. The record does not contain estimates of the revenue which would have been produced on this particular traffic at the prescribed rates. From Texas points to the ports the prescribed rates are, generally speaking, lower than the present standard rates for hauls of 320 miles and less, and higher for longer hauls.

The truck competitive rates are not made on any uniform basis but are designed to meet the competition as it now exists.

In addition to the losses in revenue to the respondents by reason of the truck competition, it was testified on behalf of numerous interior cotton compresses that the transportation of cotton by trucks has curtailed their business to such an extent as to threaten their continued operation. This comes about by reason of the fact that the trucks can be loaded to their maximum weight-carrying capacity with uncompressed cotton. There is no incentive to make lower rates on compressed than on uncompressed cotton and therefore the rates are ordinarily the same. The result is that much of the cotton which was formerly compressed at interior compresses moves to the port by truck in uncompressed form.

Railroad Proposals

The respondents' proposal is for complete abrogation of the original order in so far as it requires the maintenance of any relation between rates from points within and points without the area of truck operations to the Texas ports, leaving to respondents' judgment the level of the rates and the points between which they shall apply in order to effectively meet the truck competition, subject to their ability to justify any proposal which they may make, under the law, in an investigation and suspension proceeding. They further indicated that it may and probably will be their purpose to seek permission to establish many of these truck-competitive rates on short notice. In view particularly of the intangible nature of the competition with which they are confronted, and the fact that the establishment of competitive rates must be done quickly to be effective, the respondents contend that they can make no definite and concrete proposals as to what they will do, and that they can hope to cope with the situation only if given authority to do whatever seems necessary in each instance. They insist that even if they were given the widest latitude possible under the interstate commerce act they would still be at a disadvantage and that the placing of any additional limitations or restrictions upon their efforts to meet truck competition would go far to render such efforts abortive.

Upon consideration of suggestions made by various parties, the respondents, without receding from their original position, made certain additional proposals. They suggest that if we are not inclined to vacate the portions of the original order which are here under discussion that we postpone the effective date thereof for one year and observe the results during the next cotton shipping season. They further agree to see that materially interested shippers will be notified of applications for authority to establish truck competitive rates on short notice at or prior to the time the applicaions are filed and to attach to such application a prima facie showing of the necessity for the reduced rates, and copies of the application to the Texas commission and of the order of the Texas commission, if available, in instances where Texas intrastate rates between the same points also are involved. They stated further than when truck-competitive rates were established from the outermost limits of the trucking area, the normal rates would not be published from the next station beyond, but that they would make a reasonable gradation from the truck-competitive level up to the normal level. It was further agreed that they would not propose any truck-competitive rates which would result in net earnings to the rail carriers less than 50 per cent of the net earnings under the maximum reasonable compressed-in-transit rates prescribed in the original report.

Of the numerous interests represented at the hearing no one opposed the granting to the respondents of some measure of relief from the original order with a view to facilitating their efforts to meet the truck competition. In fact, a number actively advocated the granting of relief, expressed preference for the railroad service, and stated that they were using the trucks only because they were forced to do so for competitive reasons. There were, however, a number of divergent opinions as to the nature and extent of the relief which should be granted.

While respondents' petition refers only to the order in the instant case, they asked at the hearing that such relief as may be granted be broad enough to include any other outstanding orders which would require them to maintain a specific relation between rates affected by truck competition and those which are not.

This record shows that the transportation of cotton to the Texas ports by motor truck, which has developed during the past few years, has made severe inroads upon the traffic and revenues of the respondents which they can ill afford to

stand. This truck competitive situation exists in only a portion of the southwestern territory covered by the original report but in the portion where it exists it constitutes a material change from the conditions in the light of which the original report and order were made. It is obvious that such report and order, based as they were upon the existence of practically uniform conditions throughout the territory, and under which rates from various producing sections were related upon substantially a mileage basis, are not responsive to the new conditions that have arisen in a portion of the territory, and that modification thereof is necessary. The intensity of the truck competition decreases as the distance from the ports increases and it is true that to the extent that the rates from the nearer territory are placed upon a lower basis than from that which is more remote the old prejudice and preference will be continued, but with the difference that the new competitive conditions render it not undue.

Non-Competitive Points Not Injured

It would seem that points from which trucks do not operate can not be heard seriously to complain if the rail carriers reduce their rates within the zone of truck operations for competitive reasons, so long as they do not go below a reasonably compensatory basis, because if the railroads do not haul the cotton at lower rates the trucks will.

Upon consideration of all the pertinent facts and circumstances, including those developed at the further hearing, we are of opinion that the findings of undue preference and prejudice in the original report should be, and they are hereby, modified so as to exclude from their application during the period ending June 25, 1932, the relation between rates on cotton from points in the southwest to the Texas ports which are made lower than the maximum reasonable rates prescribed in the original order where reasonably necessary to meet truck competition, on the one hand, and rates which are maintained upon a higher level from other points in the southwest to the same Texas ports or from the same points of origin to different Texas ports, where the truck competition does not exist at all or to as great an extent, on the other hand. The effective date of that portion of the original order which prescribes a relation between the rates from Oklahoma on the one hand and from Texas and Arkansas on the other hand, to Houston, Galveston and Texas City, and from all points in the southwest to Mobile on the one hand and to the Texas ports, on the other hand, will be postponed until June 25, 1932. Truck-competitive rates which would be in violation of the original order were it not for this postponement should bear an expiration date not later than that mentioned. The question whether the effective date shall be further postponed or the order further modified will, upon appropriate application, be given further consideration after there has been opportunity to observe results during the coming cotton shipping season.

Minimum Basis Prescribed

In view of the unstable character of the truck rates, and the intangible nature of the truck competition, we are not disposed to impose definite restrictions and limitations of a general character upon the establishment of truck-competitive rates except with respect to the minimum below which the rates may not go. We are prohibited by law from granting fourth section relief if the proposed rates are less than reasonably compensatory. No good purpose is served by the establishment of rates that are not reasonably compensatory, viz., that do not pay some considerable margin of profit above cost, although less than reasonable maxima. This record discloses that the expenses of handling cotton are in excess of the average for all freight.

The ratios of railway operating freight expenses to freight revenues of carriers in the United States for the years 1926, 1927, 1928 and 1929 as computed from the annual reports filed by carriers are respectively 73.32, 74.03, 70.57 and 66.96. That is to say, the average operating cost of handling all revenue freight in 1926 was 73.32 per cent of the freight revenues received. In such computations overhead expenses as well as physical transportation expenses are included. Nevertheless, it is apparent that if freight rates in the year 1926, for example, had averaged less than 73 per cent of those actually charged, the carriers would not have earned their operating expenses, to say nothing of any return on investment. While in special cases it may be proper to establish rates, which are lower than gross cost including overhead, it is evident that to go materially below the average cost, particularly on a high-grade comparatively expensive commodity such as cotton, would result in rates that are not reasonably compensatory.

In Export and Import Rates. 169 I. C. C. 13, in granting fourth section relief in connection with export and import rates we provided that no such rate should be less than 65 per cent of the maximum reasonable domestic rate prescribed or approved by us. In this case the respondents have tentatively proposed rates in some instances as low as 50 per cent of the net compressed-in-transit rates. The compression-in-transit service for which such rates were prescribed includes the expensive gathering service of uncompressed cotton from country points into compress and concentration points and the transit service there permitted, in addition to the haul of compressed cotton from the compress to the port. It is our view that such rates would be too low and would not be reasonably compensatory. We can not approve truck-competitive rates out of which the carriers collect and retain less than 65 per cent of the maximum reasonable compressed-in-transit rates, minus the compress charge, prescribed in the original order.

The plans of the respondents as disclosed at the hearing go no further than the establishment of particular rates in particular situations that may differ materially one from another for like distances. While it is undoubtedly true that truck competition is more severe between some points than between others and that in some instances the truck charges are higher for like services than in others, nevertheless as the trucking industry becomes more stabilized, greater uniformity in such charges and service may reasonably be expected. There is much to commend the idea proposed by some of the parties that if truck-competitive rates are to be established, a general scale of rates for universal application in the territory where truck competition is encountered or reasonably may be expected in the near future should be devised and rather closely followed. This is the procedure proposed by carriers throughout the West and Southwest in meeting truck competition in the transportation of automobiles, scales being proposed on the latter commodity which are materially lower than the standard class rates for very short hauls and gradually grade up to the full class basis at 500 miles, the latter considered to be the maximum haul where truck competition is active. The establishment of such a scale on cotton would tend to keep down complaints of discrimination from different producing areas.

In connection with the filing of any proposed truck-competitive rates which would be in violation of the original order were it not for the postponement herein granted, the respondents must show that under such rates they will not collect and retain less than 65 per cent of the maximum reasonable compressed-in-transit rates minus the compress charge, prescribed in said order, and, in accordance with respondents' agreement on this record, we shall expect them to be accompanied by:

1. A showing that, so far as practicable, all parties who would be materially interested in the level of the proposed rates or in their relation to other rates have been advised of the proposal in time to give them an opportunity to protest.
2. A showing of the nature and extent of the truck competition which makes the proposed rates necessary.
3. A copy of such application as may have been made to the Texas Commission covering intrastate rates from and to the same points, if available, and a copy of such order as the Texas Commission may have issued in respect of such rates, if available.
4. A showing that the proposal will not result in abrupt rate jumps between nearby points, but that a reasonable gradation is proposed between truck-competitive and non-truck-competitive rate levels.

With the single exception of Houston, Galveston, and Texas City, which must be treated as a unit in the establishment of truck-competitive rates from points more than 200 miles from Houston, it is our purpose here to authorize the carriers to establish truck competitive rates to the Texas ports from such points as may be necessary to meet truck competition, subject always to complaint and to investigation and suspension, without the necessity of maintaining any fixed relation between such rates and the rates from points at which truck competition does not exist at all, or to the same extent, and all unexpired orders or parts of unexpired orders inconsistent with this purpose heretofore entered in other proceedings will be modified in so far as shall be necessary to or consistent with the accomplishment of the said purpose.

It will be our purpose in dealing with this truck-competitive situation to work in the closest possible cooperation with interested state commissions.

Container Rates Held Too Low

But commission finds new type of service worthy of encouragement at higher rates

WASHINGTON, D. C.

AFTER a protracted investigation of freight container service as operated by the New York Central, Lehigh Valley and Pennsylvania, which they propose to extend, and of proposals by the Missouri Pacific to establish a similar service between St. Louis and points in the West and Southwest, the Interstate Commerce Commission finds that the use of the freight container for less-than-carload shipments "may well be encouraged," because of "the promises which it holds for effective competition with transportation by truck," and "the transportation economies which evidently can be developed" with its more extensive use, but that the present and proposed container rates, taken as a whole, "would be so low as to throw an unnecessary burden on other traffic," particularly as most of the benefit of the low rates goes to forwarding companies. The commission therefore has directed the cancellation of the tariffs filed by the roads for the extension of the service and the discontinuance of the present rates by July 20, without prejudice to the establishment of new rates on the net weight of the container no lower than the contemporaneous third-class rates.

The report of the commission's investigation of container service, undertaken following protests by other western roads against the proposals of the Missouri Pacific, was dated April 14 and made public on May 1. The report is by Commissioner C. R. Porter. While seemingly not particularly impressed with the idea of adopting the service in the West, the commission nevertheless considers this a matter to be decided by the railroads for themselves, but it finds many discriminations in the present rate basis, which results, it finds, in reducing the carload rates in some instances, and the basis which it approves is intended to prevent an undue advantage being given to those able to avail themselves of container service as compared with ordinary carload or l. c. l. service. The findings are subject to the condition that respondents will extend container service to all shippers and localities served by them and desiring to employ such service, and who make reasonable request therefor.

The third-class basis is approved, also, with the proviso that in no event shall the container rate be less than (1) the contemporaneous carload rate on the highest-rated commodity loaded in the container, and (2) the rate on the next class lower than the any-quantity rate on any commodity loaded in the container which is accorded an any-quantity rating in the governing classification, the respective classes above first class to be those set forth in section 8, rule 5, of the consolidated classification; subject to a minimum weight per container of 4,000 pounds. This is intended to prevent the cutting of an any-quantity rate, which is presumed to be higher than the carload rate and lower than the less-than-carload rate would be.

Findings Subject to Possible Modification

Because of the fact that container service is, and especially at the time of the hearing was, in the initial stage of its development, the findings, the report says, are necessarily based upon a rather indefinite and incomplete record, and it may be that more mature experience with the container and a wider use of the service will warrant some modification of the findings.

Container service is now in effect between some of the principal eastern cities, having been started by the New York Central in 1921, and the roads propose to extend it to all principal points in central territory. The present basis of rates is 5 cents per mile, with a minimum of $8.25 per container, for 4,000 pounds, and an increase of 0.25 cent per mile for each additional 500 pounds or fraction thereof, up to 10,000 pounds. The Pennsylvania had advanced a proposal to charge second-class rates, 10 per cent under second-class rates, and third-class rates on consignments weighing, respectively, 4,000 pounds or less, over 4,000 pounds and up to and including 7,000 pounds, and from 7,000 pounds to 10,000 pounds. The Missouri Pacific had proposed a basis somewhat similar to that now in effect in the East but related to the class rates.

Objection is made by the commission to the mileage basis of rates because they do not taper down with increased distance, as the class rates prescribed by the commission do, and therefore would create relations differing from those of the class rate structure, and to the plan of making rates by which the cost per 100 pounds is reduced as the load increases from 4,000 to 10,000 pounds. The commission says that it has repeatedly held that it is unlawful to construct freight rates solely on the basis of the quantity of tonnage offered, but that the practice of making carload rates lower than l. c. l. rates does not violate that principle because the service is different and the cost less.

The Texas and Pennsylvania state commissions had co-operated with the federal commission in the disposition of the case. The latter commission concurred in the report while the Texas commission agreed generally but disagreed with the failure to disapprove container service west of the Mississippi river. Chairman Brainerd concurred with the results. Commissioner Eastman, concurring in part, objected to the majority finding that the present rates are in violation of section 2 of the interstate commerce act. He said that there is a difference in the unit cost of transportation dependent upon differences in container loading, and that differences in rates which are fairly related to these differences in costs are not unlawful under section 2. Commissioner Mahaffie dissented in part, saying that present traffic conditions in western territory are not such as to warrant container service and that container service on the basis approved will disrupt the class rate structure prescribed by the commission for the Southwest. While he said he thought the New York Central rates probably too low, he said that, truck competition being a fact, he saw no violation of the act in allowing carriers to meet it by relatively lower rates for the shorter than for the longer hauls. Commissioner Eastman said that the rates prescribed must be regarded as experimental but that the opportunities for improved service appear so substantial that the containers are worthy of a thorough trial.

An abstract of the "summary and conclusions" of the report by Commissioner Porter follows:

In the preceding pages the case for and against the container has been discussed at length. It has been seen that

the principal advantages claimed for it from the carrier standpoint are its possible answer to motor-truck competition, its expedited service in effecting what amounts to store-door receipt and delivery, its ability to cut down expense in handling less-than-carload traffic, its virtual elimination of loss and damage claims, and the increased car loadings which have resulted from it. On the shippers' side its advantages are savings in packing costs, expedition in service, elimination of loss and damage claims, the opportunity to ship and receive in smaller units which is responsive to present day practices of maintaining inventories at a minimum, and savings in freight rates.

The predominating objection to container service is the rate structure which accompanies or is proposed to accompany it. Certain operating witnesses doubt the wisdom of expending money for a new type of equipment in view of the fact that the present box-car equipment is more than sufficient to meet existing demands. This doubt was especially emphasized by carriers in western territory. It is at once apparent that we are not empowered to condemn a new type of equipment simply because the supply of the old type appears to be ample for the traffic offered. We are not the managers of the railroads. If respondents, or any of them, deem it wise to secure a new type of equipment they are at liberty to do so, provided the rates and regulations which accompany its operation do not transgress any provision of law.

Certain localities are fearful that container service may hurt their chances for competing with larger communities which have more tonnage available for container movement. Other localities protest because container service is not proposed in the suspended schedules to be extended to them. In response to these protests, respondents operating or proposing to operate container service expressed their intention of extending the container service to any additional localities upon demand therefor. We shall expect respondents to carry out these promises, for in no other way can undue prejudice against competing localities be avoided.

We have no difficulty in agreeing that the container as such is a commendable piece of equipment. Its savings to the carriers in loss and damage claims, in billing costs and platform expense, and the relief which it promises to existing terminals from actual or threatened congestion, all commend it. From what has just been said it should not be inferred that up to the present time respondents operating container service have, in fact, made any substantial profit from the service. We do think, however, because of the merit inherent in the container itself, the promises which it holds for effective competition with transportation by truck, and the transportation economies which evidently can be developed with the more extensive use of the container, that the use of the container may well be encouraged. We have had occasion to comment in other proceedings upon the waste brought about by loss and damage in transit, and we pointed out in *Pneumatic Sales Corp.* v *A. & R. R. R.* supra, that the seriousness of this problem is increasing rather than diminishing, and that anything that can be done to reduce such loss and damage is manifestly in the interest of carriers and public alike. We believe that extensive use of the container would eliminate much of the present heavy expense upon the carriers in loss and damage claims.

The record bearing upon the intrinsic reasonableness of the present or proposed container rates is not as complete as is desirable. We recognize that, the container service being in its infancy, it is difficult to extract the results of its operation on the eastern lines on which it has been maintained, and still more difficult to forecast the results of such operation on carriers which do not now maintain it. Taking into consideration the intrinsic nature of the service, the increased burden which the transfer of high-grade merchandise traffic to container service at the rates proposed would throw upon the remaining traffic, and the additional outlay in capital expenditures which the general use of container equipment would entail, we are of the opinion that the present and proposed container rates, taken as a whole, would be so low as to throw an unnecessary burden upon other traffic. The testimony of a number of shippers is that they would use containers even at the regular less-than-carload rates. We realize that these shippers are perhaps exceptions, and that at least most of the smaller shippers would not use the container at the regular rates. But the desirability of the container from the standpoint of the shipper as evidenced upon this record leaves no doubt that it does not need the encouragement, even if it could lawfully be accorded, which the present and the proposed rates would give it, or the sacrifice in carrier revenue which respondents are willing to make.

The proposed rates, moreover, can not be approved because they are or would be unjustly discriminatory or unduly prejudicial. The grounds upon which these conclusions are based have already been recited. We need only add that as we interpret section 2 of the act, and as it has been interpreted for us by the Supreme Court, we can not approve varying rates based on the weight of the lading offered for container shipments except upon a record which establishes that charges so determined are warranted by differences in the cost and quality of the service. This record is devoid of any such evidence, and respondents specifically disclaim any intention of justifying the variation in the rates upon any such ground. The undue prejudice in the rates before us lies primarily in the violent disruption of rate relations, most of which have been recently approved by us, which would result between competing shippers and localities. Necessarily if container service is to be conducted at one rate for the entire container content, some disruption in present relations will have to take place, but the fact that the service is new and different from that heretofore rendered, or recommends itself as effective in meeting truck competition, is no sufficient reason for disregarding this portion of the law. The disruption in relations should be kept to a minimum consistent with the best interests of the public.

The fact that the volume of traffic which could or would move in containers is substantially less in the West than in the East is in itself no reason for withholding our approval of container service in western territory. Container service should not in any event be sanctioned if its maintenance at any reasonable rates would unduly burden other traffic or would in other respects contravene the provisions of the interstate commerce act, but if such service can be maintained at an actual profit and at rates which are not unlawful, the fact that the volume of traffic which may be offered in such service is relatively small is not sufficient reason for withholding our approval thereof. While we are impressed with the evident fact that if container service is established in the West it will entail, for the present at least, close to 100 per cent empty return movement, and because of lighter traffic density, if established between all points which may seek it, will be less likely to prove profitable to the carriers, as previously stated, we are not the managers of the railroads and we have no desire to substitute our judgment in that respect for that of the railroad executives. We do not conceive it to be our duty nor within our power in an investigation of this kind to determine whether or not container service should be inaugurated upon any particular railroad or in any particular territory. It is our duty, however, to pass upon the lawfulness of the rates and charges proposed to be applied for such service. While, as stated, container service west of the river is likely to prove less profitable for the present than east of the river, and considered from that standpoint alone, we might well feel justified in prescribing a higher basis of rates for that territory than is herein approved for the East, after full consideration we feel that, in order to avoid probable undue prejudice between localities served by the same carriers east and west of the river, and in the interest of uniformity, the same basis of rates should be applied on both sides of the river.

Rates Must be Based on Class-Rate Structure

Considerations previously recited impel us to the conclusion that lawful container rates must be based upon the class-rate structure. All parties favoring the container advocate a flat rate on the container content. Such a basis, of course, disregards very largely the commodity classifications, and gives no consideration to the value of the commodity, long an important factor in the making of rates. In no other way, however, is it possible to save the very substantial share of the heavy billing and clerical costs which the container would eliminate. Upon this record we do not feel warranted in disapproving the flat rate basis.

The question of what the rate basis shall be in view of the uncertain state of the record upon the matter of reasonableness, is fraught with considerable difficulty. We have seen that the percentages of freight rated second class or higher which had moved in containers over the Pennsylvania up to the time of the hearing range from 44.5 to 87.4, an average of 71 per cent. A study of the container performances on all respondents operating that service, so far as revealed upon this record, indicates that the experience of the Pennsylvania in this respect is not unusual. On exceptions and oral argument the New York Central objected to the recommendation of the examiner that container rates on the basis of third class, subject to the carload rates as minimum, be prescribed, upon the principal ground that such a basis would increase the short-haul rates in the territory where truck competition is most effective, and that the general result would be "to lose short-haul business to the trucks

and to lower the rates on the long-haul business." There will be comparatively few instances in which the third-class rates which will shortly apply as a result of the eastern class-rate investigation would reduce the present container rates, and the evidence before us of the desirability of this container service is far from convincing that a third-class basis would turn the short-haul traffic over to the trucks. On the contrary, while considerable of the traffic now handled by trucks will no doubt remain with them because of greater expedition and ease in handling, this record strongly inclines to the view that a great deal of the traffic which now moves by truck and much of the traffic now handled in merchandise cars would move in containers at the third-class basis. Having in mind these and all other pertinent facts of record, we feel that, in the present formative state of the container service, we are not warranted in approving any basis of container rates which is lower than third class, and that this basis should be made subject to the exceptions later noted.

We have already set forth our reasons why we can not approve container rates which are lower than the contemporaneous carload rates. A somewhat similar situation arises with respect to any-quantity rates. It would seem that, in order to avoid a situation whereby a commodity such as games and toys having a carload rating of second class would move at second-class rates and a commodity such as rugs of value exceeding $200 but not exceeding $300, rated double first class in any quantity, would pay only third class, special provision should be made which would insure a higher basis of rates on such any-quantity commodities. Accordingly, the application of the third-class basis should be made subject to the further proviso that in no case shall the container rate be less than one class lower than the any-quantity rate on any commodity loaded in the container which is accorded an any-quantity rating in the governing classification.

Equipment Should be Interchangeable

We deem it our duty to point to a physical circumstance in connection with the development of the container which, if not rectified, is likely to prove a serious handicap to the future progress of the service. We have reference to the matter of interchange of the container for movement over two or more lines. As pointed out, the New York Central and some of its subsidiaries and the Lehigh Valley now use the L. C. L. container which loads six to a gondola car. The Baltimore & Ohio has entered into a contract for the use of that container. If and when they establish container service that container is also to be used by connections of the New York Central and Lehigh Valley in the proposed extension of service to central territory. On the other hand, the Pennsylvania uses the Keystone container which loads five to a flat car. The two types are not interchangeable in that each container will fit only the appliances on the type of car on which it is now transported. On exceptions the Pennsylvania states that there is no obstacle to the interchange of containers between the New York Central and its connections beyond the fact that that carrier is prohibited by contract with the L. C. L. Corporation from operating in the cars equipped to handle L. C. L. containers any containers other than those of the L. C. L. company, and that a Keystone container, "if tendered for interchange with a connecting carrier, would require merely the ordinary class of gondola equipment for its transportation." The record does not support this statement. On the contrary, it indicates that an ordinary gondola car can not be used for either one of these containers. Each one requires special equipment, which is different for each container. Carriers are thus faced with a situation not unlike that which prevailed in the days of early railroad development when, because of the different gages of track, interchange of equipment was frequently impossible and constituted a serious handicap to the development of transportation by railroad. As previously stated, it is not our province to determine the type of container which might be best suited for general use; that is a matter which should and will be left to the discretion of the carriers. We take this occasion, however, to point out to the carriers the absolute necessary for uniformity in container equipment, and the urgent desirability of attaining such uniformity before the present lack of it spreads to serious proportions and threatens to neutralize, to a considerable extent, the economic benefits inherent in the container.

The invention of the container and the container car is comparable to the invention of a new type of freight car. Thus useful invention should be managed in such a way that the primary parties in interest, namely, the carriers and the shippers, will derive the chief benefit that flows from its use. Private contractual arrangements associated with container service should not be permitted to build up an intermediary between the railroads and the shippers which may develop into a parasite of great proportions to the detriment of the railroads and without benefit of the shippers. Having in mind various financial arrangements that have existed in the past to the detriment of the railroad companies concerned, it seems appropriate to suggest further that private interest of railway officials in container service, as distinguished from their official interest in behalf of the stockholders of the railroad companies, as well as any other interest connected with the use of the container adverse to the interest of the stockholders of the railroads, should be scrupulously avoided.

Forwarding Companies Should Be Regulated

After pointing out that the principal use of the containers is by forwarding companies the report states that, not being subject to regulation, they have in some instances practiced discrimination between shippers. The remedy for these evils, it says, "if they exist and continue in a manner detrimental to the public, seems to us to be, not the elimination of the forwarder, but his regulation by law," and reference is made to the recommendation in the commission's annual report that they be subjected to its jurisdiction in some respects.

Cost of Service

Respondents expect, the commission says, that the use of container service will reduce the cost of handling less-than-carload freight to such an extent that, although their gross revenue will be reduced substantially below that which would accrue on the same freight handled in box cars, their net revenue will be increased. However, it does not concede that the cost studies introduced show this. Referring to operating witnesses for the Erie and New York, New Haven & Hartford, who opposed container service and expressed doubt of its economy, the report says:

> Their composite view is that the container would not be suitable for handling all merchandise freight so that it would be necessary to retain the box car to handle bulky and less desirable freight at an increased unit cost; that the container would tend to reduce the already low average loading of merchandise freight; that the present system of handling merchandise freight affords loading for box-car equipment which would otherwise return empty; that the container operation would not result in any diminution of freight houses and freight yards, but on the contrary would only add the burden of providing additional yard equipment in the form of cranes and tracks; and that due to the wide variation in weight to measurement of the average run of merchandise freight the box car is the most desirable facility for its transportation.

On exceptions to the examiner's report the New York Central admitted that its container rates may not be sufficiently high, but it took the position that any increases should be carefully and gradually made on the existing mileage basis. There was vigorous carrier opposition to the inauguration of container service in the West and Southwest, and the preponderance of commercial testimony was against the container so far as that section is concerned, much of the opposition coming from jobbers, who, the commission says, would like to have extremely high less-than-carload rates to discourage retailers from buying direct in small quantities. Missouri river cities also opposed container service because they feared that it would make their competition with St. Louis all the more difficult.

It is stated in the report that the Universal Car Loading & Distributing Company, the largest operator of containers, handles about 75 per cent of the container traffic of the New York Central and from 90 to 95 per cent of that of the Lehigh Valley and Pennsylvania; also that no great increase in container traffic took place until 1928, when the Universal began operation. Some cost studies introduced by the railroads which showed a net revenue on container traffic greater than would have been

received on the same traffic handled in box cars for the New York Central and Pennsylvania are analyzed and it is stated that if the service had been charged with a rental for the use of the container the saving for the New York Central would have been entirely eliminated and the Pennsylvania would have shown a net loss. The New York Central pays no rental to the L.C.L. Corporation for the use of the container, which was invented by the late A. H. Smith, formerly president of the New York Central, in consideration of certain payments for expenses incurred by the Smith estate in perfecting the container.

Examples are cited of container movements in which the carrier had cut its less-than-carload revenue more than 50 per cent but only about 16 per cent of the carrier's loss found its way to the shippers through the forwarding company's reductions, and the railroads and the forwarding companies received almost the same amount of revenue for their respective services. The proportion of revenue loss to the carriers under the container rates which is retained by the forwarding company, the report says, is an important consideration in passing upon the lawfulness of the rate basis proposed.

To change the rate relationship between the long-haul shipper and the short-haul shipper to the former's disadvantage is just as hurtful under the guise of container rates as it would be under class rates, the report says, pointing out that the container rates for comparatively short hauls are very low, measured by the class rates. It also points out that while, generally speaking, in official classification territory the usual spread between carload and less-than-carload rates on a given commodity is two classes, the container rates produce many instances where the spread is four or more classes.

After discussing advantages of the container to the shipper the report says: "In other words, being a distinctly superior service, the container service should, other things being equal, command a higher price than the present box-car service. It may be that carriers must undertake store-door delivery in order to secure for themselves and their shippers the greatest possible benefits to be derived from container service."

One Cent a Mile Excursions

(*Continued from page 901*)

ticket sales on the two days preceding and succeeding the bargain days showed a marked decline.

In Chicago the number of excursion tickets sold on the two days was about 15,000, thus making the total number of tickets sold in Chicago slightly in excess of the number of regular tickets normally sold. Of the 15,000 excursion tickets, 12,000 were coach fares and 3,000 were sleeping or parlor car fares. Of the 12,000 tickets, the majority were for nearby points.

The excursions operated by the Pennsylvania from New York to Pittsburgh, Pa., on April 11, the Boston & Albany and the New York Central from Boston, Mass., to Niagara Falls on April 18 and the Boston & Maine, the Central Vermont and the Canadian National from Boston to Montreal, Que., on April 20, were unusually successful. The round trip coach rate from Boston to Montreal, including a two-day lay-over, was $10 and the sleeping car rate was $12. The one way fare is $11.80. The coach rate from Boston to Niagara Falls was $10, with a higher sleeping car rate, while the one-way rate is $18.75. On the New York-Pittsburgh excursion the 365 sleeping car passengers averaged 35 per car and the 893 coach passengers 44.3 per car. On the Boston-Niagara trip the 649 sleeping car passengers averaged 36 per car. On the Boston-Montreal excursion, no coaches were operated, but 15 sleeping cars carried 458 passengers, or an average of 30.5 each.

On the Boston-Montreal run, each of 73 lower berths and 26 upper berths was occupied by two people, while each of 19 drawing rooms was used by four people and each of 21 compartments by three people. On the Boston-Niagara excursion, 42 lower berths contained one person each and 73, two persons each; 56 uppers, one person each, and 26 uppers, two persons each.

The outstanding feature of these excursions is the fact that 60 per cent of the patrons of sleeping cars were using this type of accommodation for the first time. An analysis of the passengers for Montreal shows that 70.44 per cent were women and 29.56 per cent were men. Eight per cent of the patrons were in family groups. A classification according to occupation shows that 54 per cent consisted of clerks, stenographers and sales people; 9 per cent were merchants; 9 per cent professors; 2 per cent business men; 9 per cent laborers and mechanics; 8 per cent housewives, and 9 per cent teachers and students.

The Mo. Pac. in 1930

TOTAL railway operating revenues of the Missouri Pacific for 1930 were $120,187,689, as compared with $139,807,914 in 1929, a decrease of $19,620,225, or 14.03 per cent. Railway operating expenses decreased $13,893,894, or 13.50 per cent. The decrease in freight revenue was $14,565,794, or 12.74 per cent. There were decreases in all classes of commodities, the principal ones being forest products, $3,276,184, and manufacturers and miscellaneous, $7,012,585. The principal decreases in manufactures and miscellaneous were fuel, oil, iron and steel, machinery and boilers, and automobiles and motor trucks and parts.

The total number of tons of revenue freight handled decreased 8.26 per cent, and ton-miles decreased 6.22 per cent. The average revenue per ton-mile was 9.63 mills, as compared with 10.35 mills in the previous year. Passenger revenue for the current year was $10,210,815, as compared with $13,023,292, a decrease of 21.60 per cent. Passengers carried decreased 27.70 per cent and passengers carried one mile fell off 20.90 per cent. Mail revenue for the year was $3,374,115, as compared with $4,492,168 in 1929, which included a payment of $1,303,207 covering back mail pay.

A program was inaugurated in 1925 to improve the line between St. Louis and Jefferson City, Mo., by double tracking, reducing grades and curves, and revising alinement. This work has been virtually completed, the work done during the past year consisting mainly of the construction of 10.44 miles of second main track between Lake Hill and Eureka. Grades on this line have been reduced to a maximum of 0.3 per cent in each direction, except for two short 0.5 per cent velocity grades against westward trains. On the river route of the Eastern division, 3 miles of second main track were constructed through Lamine, Mo., and 3.80 miles through Myrick, Mo. This work was described in detail in the *Railway Age* of April 11.

On the Central Kansas division, improvement of grade and alinement was carried out between Osawatomie and Council Grove, Kans., a distance of 24.53 miles, and between Gypsum City and Hoisington, 14.24

miles. On the Arkansas division, 9.81 miles of second main track were constructed southward from Newport across the White River Valley, at an elevation well above the highest known floods. During the year, 407 miles of automatic block signals were installed, making a total of 1,948 miles for the system, in addition to which 10 interlocking plants were installed and 24 additional highway crossings were equipped with signal protection.

Charges to road and equipment were: for second main track, $3,550,326; road, ($14,362,824, less retirements, $455,087), net $13,907,737; equipment ($11,285,179, less retirements $1,737,692), net $9,547,487; and a credit of assets and liabilities not appraised, June 1, 1917, of $175,307, making total charges to road and equipment for the year, $27,023,410. Expenditures for maintenance of way decreased $6,368,064, maintenance of equipment expenditures decreased $2,206,575, and transportation expenses decreased $4,343,268.

Additional franchises were purchased and leased during the year by the Missouri Pacific Transportation Company (the company's motor coach subsidiary) aggregating 458 miles, while operations were abandoned on 346 miles of route, making approximately 3,638 miles being served by motor coaches of the company in regular daily passenger service. Under contractual arrangements with the Missouri Pacific and the Gulf Coast Lines, for the use of required facilities, a system of pick-up and delivery service of l.c.l. freight was inaugurated during the year in certain sections of Arkansas and Texas.

The results from operations of the Gulf Coast Lines, subsidiary of the Missouri Pacific, show an increase in the volume of freight traffic handled, consisting mainly of crude oil from the Refugio field. Total operating revenues for the year were $15,428,421, an increase of $191,955 or 1.26 per cent. Total railway operating expenses decreased $96,180 or 0.91 per cent. The increase in freight revenue was $490,974, or 3.87 per cent. The principal increase was in products of mines, $1,374,920. The principal decreases were in products of agriculture, $257,572, products of forests, $242,903, and manufactures and miscellaneous, $334,132.

The International-Great Northern for the year showed a decrease in volume of freight traffic as well as in gross and net income. Total railway operating revenues for the year were $15,072,346 as compared with $18,244,983 in the previous year, a decrease of 17.39 per cent. The principal decreases were in manufactures and miscellaneous, $1,346,952, due to decrease in receipts of automobiles and other manufacturers from connecting lines; products of agriculture, $564,500, largely in cotton, due to a short crop resulting from drought conditions in North and West Texas, Arkansas and Oklahoma, as well as increased truck competition, movement of cotton also being retarded because of unfavorable market conditions; l.c.l. traffic, $231,075, due to a general falling-off in business and to truck competition; products of forests, $181,443, due to slowing up of building construction; and animals and products, $91,379, influenced largely by unfavorable market conditions. Products of mines increased $101,998.68, principal increases being in crude petroleum. The total number of tons of revenue freight decreased 17.26 per cent and the ton-miles decreased 14.64 per cent.

Table I herewith shows selected freight service operating statistics for the Missouri Pacific Lines for 1930 as compared with 1929. The maintenance of a high degree of operating efficiency in the face of declining traffic is marked. All three lines showed a material reduction in train-hours and in fuel consumption per thousand gross ton-miles. Gross ton-miles per train-hour showed a noteworthy increase on the Missouri Pacific proper and on the Gulf Coast Lines.

Table II shows revenues and expenses of the Missouri Pacific Railroad since 1920. The figure for net income, it will be noted, while much lower than that of 1929 was, nevertheless, higher than that of five out of the ten years for which figures are shown. The company paid its regular dividends of 5 per cent on its preferred stock the cash requirement for which was surpassed by net income by $3,168,065.

Table I—Missouri Pacific Lines—Comparison of Selected Freight Operating Statistics

	Missouri Pacific R. R.				Gulf Coast Lines				International-Great Northern			
			Per cent of change				Per cent of change				Per cent of change	
	1930	1929	Inc.	Dec.	1930	1929	Inc.	Dec.	1930	1929	Inc.	Dec.
Mileage operated	7,423	7,430	....	....	1,017	1,017	....	....	1,160	1,160	....	....
Gross ton-miles (thousands)	29,841,074	31,095,941		4.04	2,944,688	2,983,547		1.30	2,957,961	3,290,753		10.13
Net ton-miles (thousands)	11,963,649	12,874,460		7.08	1,053,132	1,074,003		1.95	1,034,395	1,190,910		13.14
Freight train-miles (thousands)	16,533	17,763		6.93	1,656	1,756		5.70	2,017	2,145		5.97
Freight locomotive-miles (thousands)	17,513	19,033		7.99	1,718	1,836		6.43	2,061	2,196		6.15
Freight car-miles (thousands)	775,301	809,720		4.25	78,725	79,906		1.48	81,078	90,726		10.64
Freight train-hours	1,116,703	1,280,683		9.31	119,743	135,049		11.33	132,748	148,770		10.77
Car-miles per day	42.9	42.0	2.14		31.1	34.1		8.79	26.7	27.5		2.91
Net tons per loaded car	25.3	25.0	1.20		23.7	23.3	1.71		21.8	21.7	0.46	
Per cent loaded to total car miles	61.0	63.5		3.94	56.5	57.8		2.25	58.5	60.6		2.81
Net ton-miles per car day	662	668		0.90	415	459		9.59	340	361		5.82
Freight cars per train	47.9	46.6	2.80		48.5	46.5	4.30		41.2	43.3		4.85
Gross tons per train	1,805	1,751	3.08		1,778	1,699	4.65		1,467	1,534		4.37
Net tons per train	724	725		0.14	636	612	3.92		513	555		7.57
Train speed, miles per train hr.	14.8	13.9	6.47		13.8	13.0	6.10		15.2	14.4	5.55	
Gross ton-miles per train-hour	26,722	24,281	10.05		24,932	22,092	12.85		22,283	22,120	0.73	
Net ton-miles per train-hour	10,713	10,053	6.56		8,795	7,953	10.59		7,792	8,005		2.66
Lb. coal per 1,000 gross ton-miles	121	127		4.73	89	94		5.32	108	111		2.71
Loco. miles per loco. day	76.9	83.3		7.68	61.7	71.8		4.07	75.8	84.0		9.76
Per cent freight locos. unserviceable	13.6	12.6	8.00		15.5	19.3		19.61	16.4	14.7	11.56	
Per cent freight cars unserviceable	7.3	4.7		55.30	12.4	10.5	18.1		14.3	11.6	23.28	

Table II—Missouri Pacific Railroad—Revenues and Expenses

	Oper. Rev. Freight	Oper. Rev. Passenger	Total Oper. Revenues	Operating Expenses	Net Ry. Oper. Income	Gross Income	Net Income	Investment in Road & Equipment Increase
1921	$81,688,215	$19,241,029	$109,785,949	$91,693,855	$10,236,848	$15,270,486	$3,537,016	$8,885,159
1922	73,918,551	16,898,650	99,921,331	84,658,914	8,247,034	10,710,817	1,413,712*	6,712,521
1923	85,961,414	18,970,393	114,607,947	97,939,965	8,893,245	16,332,478	121,345	12,782,103
1924	95,949,391	17,525,199	123,647,723	98,466,365	15,817,584	19,384,445	6,503,217	18,731,055
1925	104,319,276	16,536,035	130,831,661	102,276,499	18,013,063	22,472,152	7,648,208	24,253,193
1926	107,913,649	16,035,972	133,990,294	102,851,943	20,333,785	23,955,071	8,631,667	19,337,885
1927	100,788,411	14,652,502	125,728,405	99,565,997	16,899,498	20,723,265	4,401,196	22,665,911
1928	107,388,214	13,552,823	131,576,525	99,091,201	21,347,536	25,385,138	9,512,690	15,803,618
1929	114,345,151	13,023,292	139,807,914	102,903,441	24,554,185	30,001,398	12,217,763	28,968,184
1930	99,779,356	10,210,815	120,187,689	89,009,546	20,790,035	25,742,494	6,713,610	27,023,410

* Deficit.

Looking Backward . . .

Fifty Years Ago

The trunk line executive committee, following the request of the Wabash, St. Louis & Pacific [now the Wabash] that the established rate on livestock be either restored and maintained or that the lowest special rate be adopted as the general rate, reduced livestock rates between Chicago and New York, eastbound, from 60 cents to 35 cents per 100 lb., and dressed meat rates from 80 cents to 40 cents per 100 lb. Livestock is to be billed subject to the following minimum car load weights: Cattle, 19,000 lb.; horses, 20,000 lb.; hogs, double deck, 22,000 lb.; sheep, double deck, 18,000 lb.—*Railway Age,* May 12, 1881.

The work of construction of the Oregon Railway & Navigation [now the Oregon-Washington Railroad & Navigation Company], which was seriously interfered with during the winter months by the severe and protracted cold weather, was recommenced with full vigor in April. Trains are now running through from The Dalles, to Walla Walla. The line from Walla Walla to Grange City, 58 miles, is fully graded and ready for ties and rail. The construction of the line from Umatilla to Baker City, about 160 miles, the point of connection with the Oregon branch of the Union Pacific, has also been started at various points. The work of constructing the Portland-The Dalles line, 90 miles, will be pushed to completion by the end of the year.—*Railroad Gazette,* May 6, 1881.

Twenty-Five Years Ago

C. D. Young has been appointed assistant master mechanic of the Pennsylvania Lines, Northwest system, at Fort Wayne, Ind.—*Railway Age,* May 11, 1906.

Records kept by the Atchison, Topeka & Santa Fe of the insertions and removals of both treated and untreated ties upon its lines east of Albuquerque, N. M., from 1897 to 1905, show that the average age of the treated ties, as evidenced by the date marks, was 10.62 years.—*Railway Age,* May 11, 1906.

E. H. Harriman, president of the Southern Pacific, arrived in New York over the New York Central, on a regular train (the Empire State Express), on the evening of May 8, in 71 hours and 27 minutes from Oakland, Cal. To Buffalo, N. Y., Mr. Harriman traveled by special trains. The best previous time made over this route, but using the Erie between Buffalo and New York, which is 15 miles shorter than the New York Central, was 73 hours and 12 minutes in October, 1905.—*Railroad Gazette,* May 11, 1906.

Ten Years Ago

The California State Railroad Commission has directed the Southern Pacific, the Atchison, Topeka & Santa Fe, the Los Angeles & Salt Lake and the Pacific Electric to proceed with the construction of a union passenger station on the Plaza site on the Los Angeles river at Los Angeles, Cal. Plans for the union station must be filed within six months, the commission ordered.—*Railway Review,* May 7, 1921.

A situation apparently without parallel in the history of rail transportation has been precipitated by the decision and order of the Colorado Supreme Court, stipulating that the defunct Denver, Boulder & Western, which operated from Boulder to Ward and Eldora, in the north-central part of Colorado, shall resume operations, notwithstanding the fact that the road was junked nearly two years ago—its rails torn up, its locomotives sent to China and South America, and its coaches and freight cars sold in this country.—*Railway Age,* May 6, 1921.

New Books . . .

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Freight and Passenger Service Operating Statistics, Class I Steam Roads by Regions (1920-1930). Regional map on inside cover page. 13 p. Pub. by Bureau of Railway Economics, Washington, D. C., as its Statistical Summary No. 12. *Apply.*

Graphical Supplement of Monthly Reports. Series 1931. No. 1. The Relative Revenues graph was printed in the *Railway Age,* May 2, 1931. Other graphs show "Revenues, Expenses, Taxes and Income of Class I Steam Railways, 1921-1930," "Revenue Ton-miles, Freight Revenue and Cars of Revenue Freight Loaded . . . 1924-1931" and "Passenger and Allied Service Revenues and Passenger and Allied Service Car-Miles . . . by Districts 1920-1930." 1 p. Pub. by Bureau of Statistics, Interstate Commerce Commission, Washington, D. C. *Apply.*

State and Local Taxation of Business Corporations. "The most striking feature of the picture of state and local taxes on business corporations . . . is the great diversity in the forms of taxation and the methods of administration. . . .Another outstanding fact is the discrimination between incorporated and unincorporated enterprises. . ." p. v, vi. 177 p. Pub. by National Industrial Conference Board, Inc., New York City. $2.50

Periodical Articles

Colombian National Railways to be Placed on Commercial Basis, by Walter J. Donnelly. "A board to manage on a commercial basis all railways that are the property of the Colombian Government has recently been established by act of Congress (law 29 of 1931) and the signature of the President of the Republic." p. 110. Commerce Reports, April 13, 1931, p. 110-111.

Has the Business Cycle a Definite Wave Length?—Evidence Points That Way, by Willford I. King. ". . .Perhaps the cause lies in some peculiar quality of the human brain. Perhaps, as Jevons and Moore have contended, the motivating force is sun radiation—this force controlling rainfall, which in turn governs crops. Fame awaits the man who can find the correct solution for the puzzle and then prove that he is right." p. 813 Includes sine curve have wave length of 39.56 months fitted to the Axe-Houghton-Annalist Index of Business Activity (Quarterly Averages) 1879-1934. Annalist, May 1, 1931, p. 812-813.

Illinois, Crossroads of the Continent, by Junius B. Wood. "World's greatest railroad center once tried to keep railroads out." p. 584. "The State's wealth is put at 22½ billion dollars. . . . The greatest marvel is its rapid growth, for 136 years ago, General Anthony Wayne bought the entire area from the Indians for one cent an acre—$363,000, the price of the State. . . .Transportation has made it a world crossroads. . ." p. 594. Illustrated. National Geographic, May, 1931, p. 523-594.

New Locomotives for Chinese Railways. An extensive article describing and illustrating the new locomotives built by American, British, German, Czecho-Slovak and Belgian firms, and in the shops of the South Manchuria Railway at Dairen. Far Eastern Review, March 1931, p. 153-171, 176.

Refrigerator Ships Speeded Up to Handle Pacific Coast Fruit. "The outlook for a European export crop of approximately 3,000,000 boxes of California citrus fruit, this year, together with the expected Pacific Northwest apple exports of approximately 6½ million boxes, has been met with the announcement of European-Pacific refrigerator ships that sailing frequency from the Pacific Coast this season would be doubled and in one instance, at least, tripled." Merchant Marine Bulletin, April 1931, p. 31.

Odds and Ends . . .

Another Hole-in-One Golfer

Hallie C. Brewer, caller on the Illinois Central at Carbondale, Ill., recently achieved the ambition of every golfer, the making of a hole-in-one. He accomplished this feat at Midland Hills Country Club, Carbondale, with a 136-yd. drive.

In His Hundredth Year

Kirby C. Jackson, of Chicago, retired engineman of the Pennsylvania, may not be the oldest living 50-year veteran, but he is certainly one of the oldest pensioners on any railroad. On March 8 Mr. Jackson, who retired 29 years ago after 44 years of railway service, celebrated the ninety-ninth anniversary of his birth.

Radio Stars

Among the railroaders who have made a name in the broadcasting field are Mrs. Maurine S. Frank, daughter of the agent of the Gulf Coast Lines at Madisonville, Tex., and Mattiline Rogers, clerk in the auditor's office of the G. C. L. at Kingsville, Tex. Their joint weekly broadcasts have made them widely known to Texas listeners.

Fifty-Year Man

Upon the occasion of a recent veteran celebration, the Louisville & Nashville delved into history and discovered that James Geddes was the first 50-year man on that railroad, having completed that length of service on September 2, 1901. It would be interesting to know who was the first 50-year man on American railways, who is still living.

One Year Between Trains

Heaven help the prospective passenger for the train that runs between Olney and Roade on a section of the old Stratford-on-Avon & Midland Junction Railway (England) if he misses connections and decides to wait for the next train. He has a long wait—just one year, exactly! Only one passenger train a year is operated on this section of track and it makes a round trip each Easter Monday.

Double Headlights

Probably the only locomotive ever operated in this country with two headlights was the New York, New Haven & Hartford's old No. 129, which pulled the famous New England Limited, the "Ghost Train," on its non-stop run from Boston to Willimantic, Conn. The chief reason for equipping this engine with two headlights was to distinguish it as a limited train, one of the first, by the way, in this country. The lights were mounted side by side on top of the smokebox, in front of the smokestack.

Elephant Episode on the Great Indian Peninsula

A freight train which was traveling on the electrified section between Poona and Bombay (India) had, as part of its load, an elephant in an open wagon. While the car was standing in Chinchvad station, the elephant is supposed to have taken a close interest in the overhead wire, and investigated it with its trunk. The result was a severe shock for the elephant, which sat down heavily on the floor of the car, exactly where the mahout had been sleeping a few minutes before. The result of the shock was to put the elephant in a bad temper, and in a passion of anger it got hold of the overhead equipment and displaced it sufficiently to ground it against the bridge structure under which the car was standing. This tripped out the sub-stations and blocked the main line. Pending instructions from headquarters, the elephant's trunk was lashed down, and the car in which it was traveling was set out on a siding. The train then proceeded, and the elephant was kept at Chinchvad. As a result of instructions received, the elephant had to get out and walk the 100 miles to Bombay. This incident appears to introduce a new factor into the frequently discussed pros and cons of railway electrification.—Railway Gazette.

A Versatile Sportsman

O. J. Rowe, assistant superintendent of the Canadian National at Biggar, Sask., is probably as versatile a sportsman as any other railway man in North America, and his sports are outdoor and indoor and all the year around. He is now the senior tennis champion of Western Canada; in 1930 he won the waltz championship of the same territory. In addition, he owns and coaches the ice-hockey team which was runner-up in its league this season. Twenty years ago Mr. Rowe pitched for the baseball team which won the championship of the Panama Canal Zone for three years in succession.

Fifty Years Ago

The old print reproduced herewith shows the contemporary idea of the delights of Pullman travel in 1880. It also serves

The Delights of Travel in 1880

to illustrate the remarkable progress that has been made since that time. In this particular, at least, one would hardly yearn for "the good old days."

Why McIlrath Drinks Black Coffee

A few days ago Mrs. Alice M. McIlrath, whose husband, James, is assistant secretary of the American Railway Association, complained to Chief Freeman of the Evanston Police department of unwelcome visits of a flock of squirrels to the back door of her home at 2610 Isabella street. The creatures have the habit of removing the tops from bottles left in the early dawn by the milkman. Not content with the milk, they lick up the cream, all of which makes the morning meal—for the home folks—a dreary business. Officer Miller, to whom the case was assigned, took over his duties conscientiously, but after a day at it the squirrels had him on the ropes. The little beasts are tame to a point of insolence, said he. "I thought maybe if I offered 'em a nut they'd go away and forget the milk," said the policeman. "What did one of 'em do but walk right up take the whole bagful of nuts away from me and go south with it. It is my belief that these squirrels get up early in the morning and pick up the milkman on his rounds. They seem to have his route down pat." Mr. Miller asked his chief for a few assorted dogs to help chase the varmints away. Slaying squirrels is not the thing to do in Evanston. The neighborhood in which the McIlraths live is well wooded, and several other citizens have had the same unhappy experience as the complainants. Last year the squirrels' appetites took a fancy to the buttons on doorbells, which was even more annoying.—Chicago Daily News.

NEWS

I. C. C. Rules for Recapture Procedure

Special rules of procedure for determination of excess income issued

The Interstate Commerce Commission has issued special rules of procedure for the determination of excess net railway operating income under Section 15a of the transportation act, stating in the form of rules the practice which it has been following for some time since it began the practice of issuing tentative recapture reports. The commission now has outstanding fifty or more such tentative reports but only one final recapture report, in the case of the Richmond, Fredericksburg & Potomac.

Under the rules as announced, in proceedings under Section 15a for the determination and recovery of excess net railway operating income the commission will prepare a tentative report of its findings in respect to the excess income of any common carrier for any year or years, which will include a statement of the value of the property devoted to common-carrier purposes, the net railway operating income, and the amount of money payable to the commission. The commission will serve the tentative report upon the carrier, the Attorney General of the United States, and upon such additional parties as the commission may prescribe. Protests of tentative reports shall be filed with the commission within 40 days. If no protest is filed within the time allowed, the tentative report and order shall become, and be, upon the order of the commission, a final determination of the matters reported therein.

At hearings on protests the protestant shall appear and present evidence in support of its protest, and the bureaus of the commission may thereupon present evidence. Upon failure of the protestant to so appear and support its protest the tentative report may by further order of the commission be made final as to all matters and determinations therein, as if no protest had been filed.

Supplemental Report on Western Trunk Line Rates

The Interstate Commerce Commission on May 4 made public a supplemental report by Commissioner McManamy making certain modifications of its findings in the western trunk line class rate case, in which it prescribed a general readjustment of class rates in western trunk line territory which is now expected to be made effective about June 15. Of 24 petitions received by the commission seeking reconsideration and modification of the original report one has been granted, 15 have been denied, three are discussed in the supplemental report and five are still pending. The supplemental report provides that respondents are not relieved, when general bases for a maximum reasonable rate structure are prescribed, of their responsibility to adjust rates to meet, within the provisions of the law, the needs of particular traffic. Rates between the eastern part of western trunk line Zone 1 and official and Illinois territories are modified by an appendix containing a modified "bridge scale." Short and financially weak lines are authorized to publish rates to, from, and between points on their lines made by adding distance arbitraries to the general bases otherwise prescribed.

Injunction Against Grain Rates Granted

A temporary injunction restraining the Interstate Commerce Commission from placing its order revising rates on grain and grain products into effect for a period of 60 days was granted the Western railroads by the United States District Court at Chicago on May 7. This court action changes the effective date of the order from June 1 tc August 1.

Progress Toward Eastern Merger Plan

Additional progress toward the formulation of the plan for the grouping of the eastern railroads into four great systems has been made recently. The Pennsylvania and the Van Sweringen interests are understood to have reached an agreement as to the extent of the trackage rights to be accorded to the Pennsylvania over the Lehigh Valley to afford access to the industrial districts of Allentown and Bethlehem, Pa., in the event the Lehigh is transferred to the control of the Van Sweringen group; and also as to a joint control of the Virginian, by stock ownership or lease, by the Norfolk & Western and the Chesapeake & Ohio, as part of the Pennsylvania and Chesapeake & Ohio-Nickel Plate systems. All of this is, of course, subject to the approval of the Interstate Commerce Commission, but it reduces the number of points which are to be decided by arbitrators before the roads are in a position to file their petition with the commission for a modification of its existing consolidation plan in accordance with the four-system plan.

Net for First Quarter Averaged 2.07 Per Cent

Income of $107,098,448 compares with earnings of $176,-542,859 last year

Class I railroads of the United States for the first three months of 1931 had a net railway operating income of $107,098,-448, which was at the annual rate of return of 2.07 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In the first three months of 1930, their net was $176,542,859, or 3.48 per cent.

Operating revenues for the three months totaled $1,078,680,915, compared with $1,332,555,118 for the same period in 1930, or a decrease of 19.1 per cent. Operating expenses amounted to $857,-779,853, or a decrease of 17.4 per cent.

Taxes amounted to $82,027,350, a decrease of 7 per cent. For March alone, the tax bill of the Class I railroads amounted to $27,863,521, a decrease of $2,196,510 under March the previous year.

Fifty-two Class I railroads operated at a loss in the first three months of 1931, of which 16 were in the eastern district, nine in the southern and 27 in the western.

For the month of March the net railway operating income was $45,905,754; (annual rate 2.22 per cent). In March, 1930, the net was $61,188,819, or 3.02 per cent. Operating revenues for March amounted to $376,148,849, a decrease of 17 per cent. Operating expenses $291,-581,961, a decrease of 17 per cent.

The Eastern district reports for the three months a net of $60,241,143, (annual rate 2.50 per cent). For the same period in 1930, it was $99,145,105, or 4.22 per cent. Operating revenues in the Eastern district for the three months totaled $545,186,250, a decrease of 18.9 per cent; operating expenses $431,367,558, a decrease of 16.9 per cent. For March the net was $25,299,212, compared with $32,760,030 in March, 1930.

The Southern district for the three months reported a net of $12,540,174 (annual rate 1.43 per cent). For the same period in 1930, it amounted to $25,017,531, or 2.85 per cent. Operating revenues amounted to $142,605,592, a decrease of 20.2 per cent; operating expenses $115,-888,728, a decrease of 16.7 per cent. The Southern district for March reported a net of $6,081,354, compared with $9,308,-727 in March, 1930.

The Western district for the three months had a net of $34,317,131 (annual

rate 1.84 per cent). For the same three months in 1930 it was $52,380,223, or 2.84 per cent. Operating revenues amounted to $390,889,073, a decrease of 18.8 per cent; operating expenses $310,523,567, a decrease of 18.4 per cent. For March, the net was $14,525,188, as compared with $19,120,062 in March, 1930.

CLASS I RAILROADS—UNITED STATES

	Month of March 1931	1930
Total operating revenues	$ 376,148,849	$ 452,953,789
Total operating expenses	291,581,961	351,468,516
Taxes	27,863,521	30,060,031
Net railway operating income	45,905,754	61,188,819
Operating ratio—per cent	77.52	77.59
Rate of return on property investment	2.22%	3.02%
	Three months ended March 31	
Total operating revenues	$1,078,680,915	$1,332,555,118
Total operating expenses	857,779,853	1,038,845,711
Taxes	82,027,350	88,166,570
Net railway operating income	107,098,448	176,542,859
Operating ratio—per cent	79.52	77.96
Rate of return on property investment	2.07%	3.48%

Southern Extends Second Track

The Southern placed 77 miles of second main track, between Williamstown, Ky., and Danville on the Cincinnati, New Orleans & Texas Pacific, in service on May 1, providing it with a double track line between Cincinnati, Ohio, and South Fork, Ky., 136 miles. Construction of the 77-mile section had been in progress since September, 1928.

Extensive Low-rate Excursions

The Southern Pacific will again offer transportation at about one cent a mile, when on May 8 and 9 it will establish a round-trip passage fare of three-fifths of the regular one-way fare throughout its system. The tickets will be good both in day coaches and Pullman cars on Southern Pacific lines from Portland, Oregon, to El Paso, Texas, and from San Francisco, Cal., to Ogden, and Salt Lake City, Utah.

Pullman Excursion Rates in the Southwest

As a means of determining the effectiveness of reduced rail and sleeping car rates, the Texas & Pacific and the Pullman Company are endeavoring to arrange an experimental excursion from Dallas, Tex., to El Paso on June 5, this course being selected because of its freedom from competition. It is planned to make the round trip rail rate the lowest ever offered on an excursion in this territory, while the Pullman rate reduction will be the first made in the south. Passengers will be permitted to occupy the cars over night at El Paso.

Southern Pacific Cuts Working Time on Southern Lines

A reduction of one day in the five-day working week of mechanical department forces on the Southern Pacific lines in Texas and Louisiana has been made as an alternative to reducing the number of workers employed, by common consent of both the railway and the employees. Approximately 2,400 men will be affected by the change. Two working days a month have been cut from the working time of about 1,200 persons in the general offices at Houston.

Barge Line Asks Through Routes and Joint Rates

The Mississippi Valley Barge Line has filed with the Interstate Commerce Commission petitions asking it to issue specific orders to require the establishment of through routes and joint rates via its barge service on the Ohio and Mississippi rivers and connecting rail lines on the basis that has been accorded the federal barge line. The petitions state that the principle of the applications has already been established by commission orders but that the rail lines will not participate without specific orders.

Low Freight Rates For Automobiles

To accommodate vacationists with automobiles, the Pennsylvania will this summer sell tickets from a hundred different stations on its lines to the principal cities and summer resorts in New England and Eastern Canada, under an arrangement by which owners of automobiles can conveniently ship their cars, at low rates. For five railroad tickets, two of which are to be used by passengers riding on regular passenger trains, an automobile will be taken by freight through to destination, the plan being similar to that which has been in operation for some time between northern cities and points in Florida.

Production of Rail Joints and Fastenings

The production of angle-bar joints in the United States in 1930 totaled 116,754 gross tons, compared with 194,225 gross tons in 1929. The production of tie plates in 1930 totaled 427,446 gross tons, compared with 603,758 gross tons in 1929 or a reduction of 29.3 per cent. However, this total includes both steel and iron tie plates, and the reduction in the production of iron tie plates from 47,713 gross tons to 27,547 gross tons was proportionately larger, or a decrease of 42.2 per cent. The production of fish plates and other rail joints during 1930 totaled 19,223 gross tons, or a slight decrease from the total of 20,629 produced in 1929.

Cleveland Appointed Chief Engineer, N. Y. Public Service Commission

Malcolm C. Cleveland, assistant chief engineer of the Lehigh Valley, with headquarters at New York, has been appointed chief engineer of the Public Service Commission of New York, succeeding Charles R. Vanneman, who has resigned to become head of the firm of Charles R. Vanneman, Inc., consulting engineers.

Mr. Cleveland, who is a graduate of Case School of Applied Science, Cleveland, Ohio, entered railway service in the engineering department of the Baltimore & Ohio. From 1902 to 1907, he served as assistant engineer maintenance of way and engineer maintenance of way of the Cleveland, Cincinnati, Chicago & St. Louis, and from 1907 to 1910 was a division engineer on the Michigan Central. From 1910 to 1914, Mr. Cleveland was connected with the New York Central, and in the latter year entered the employ of the Lehigh Valley as valuation engineer, which position he occupied until 1927. In that year he became principal assistant engineer and two years later was promoted to assistant chief engineer, which position he now vacates to enter the service of the New York Public Service Commission.

B. & O. Gets Trackage Rights Completing New Route

Daniel Willard, president of the Baltimore & Ohio, speaking in Boston, Mass., on May 2, announced that arrangements had been made with the Pennsylvania whereby the latter company would accord trackage rights to the B. & O. from a connection with the Reading at Williamsport, Pa., to a connection with the Buffalo & Susquehanna at Drittwood. The B. & O. controls the B. & S. and, in the event that it should acquire control of the Reading, would with these trackage rights have a new Chicago-New York line much shorter and with easier grades than its present line.

Chicago & Illinois Midland Aids Unemployed

The Chicago & Illinois Midland has been co-operating with social agencies at Springfield, Ill., in an endeavor to relieve unemployment at that point. A feature of the railway's relief work has been the provision of a community garden comprising 22 acres of land which, at the expense of the railroad, was plowed and prepared for seed. The tract was divided into plots of a size determined by the requirement of an average family of five persons. Assignment of the plots among the unemployed being made through the Springfield Council of Social Agencies. The C. & I. M. provides all of the seed and the necessary tools, together with supervisors and watchmen for the garden.

Discontinuance of Inland Stations in New York Authorized

Discontinuance by the Pennsylvania and Lehigh Valley railroads of their so-called off-track or inland freight stations on Manhattan Island has been found justified by the Interstate Commerce Commission in a report made public on May 4. It is held that the facilities on the North river waterfront which these roads desire to substitute for the inland stations will be reasonably adequate to take care of the traffic and that the public interest will not be adversely affected. The commission vacates its order of suspension of tariffs filed by the roads effective December 1, 1930. The Pennsylvania proposed to discontinue stations at Watts and Washington streets and at Laight and Washington streets, while the Lehigh Valley proposed to discontinue stations on Beach street, Laight street and Washington street. The Pennsylvania last year established its Desbrosses street station adjoining Pier 29 and the Lehigh Valley established a new station at Pier 38. Various protestants objected because they

said it was more convenient for their trucks to use the inland stations. The commission also overruled motions that it dismiss the case for want of jurisdiction.

Club Meetings

The Car Foremen's Association of Chicago will hold its next meeting on Monday evening, May 11, at the Great Northern Hotel, Chicago. D. G. Phillips, superintendent of safety of the Wabash, will speak on safety as affecting the car department.

The New York Railroad Club will hold its next regular meeting at the Engineering Societies' Building, West Thirty-ninth street, New York City on Friday evening, May 15. This has been designated Lackawanna Electrification Night. Brief addresses will be made by D. C. Jackson and E. L. Moreland, consulting electrical engineers, and there will also be talks by the following officers of the road: G. J. Ray, chief engineer; J. S. Thorp, electrical engineer; J. J. Pierce, assistant superintendent; E. E. Root, master mechanic and J. E. Saunders, signal engineer. Music will be furnished by the Lackawanna Glee Club from the Buffalo Shops.

Pacific Coast Train Changes

The Chicago, Milwaukee, St. Paul & Pacific has discontinued the Columbian, which operates between Chicago and Seattle, Wash. In addition, the Pacific Limited, which operated between the west coast and Chicago over the Southern Pacific, the Union Pacific and the Milwaukee, from Omaha, Neb., to Chicago, is now being run over the Chicago & North Western from Omaha to Chicago, and the Milwaukee has established a new train between Chicago and Omaha, to replace the Pacific Limited. This train leaves Chicago at 10:30 p.m. and arrives in Omaha at 12:35 p.m. the next day, while returning it leaves Omaha at 12:30 a.m. and arrives in Chicago at 3:15 p.m. the next day. Concurrent with the rerouting of the Pacific Limited, the Union Pacific extended the points served to include Tacoma, Wash., and Seattle, and at the same time discontinued the Continental Limited, operating between Chicago and Los Angeles.

P.R.R. Substitutes Bus for Train Service on N. J. Branch

The Board of Public Utility Commissioners of New Jersey in a recent decision permitted the abandonment by the Pennsylvania & Atlantic, a subsidiary of the Pennsylvania, of its Island Heights branch extending from Pine Beach to Island Heights, N. J., a distance of 1.2 miles. The order also permitted the substitution by the Pennsylvania General Transit Company, highway subsidiary of the Pennsylvania, of motor vehicle service in lieu of the abandoned train service.

The new motor coach service will extend from Island Heights to Toms River. The decision finds that the bus will provide a reasonable means of transportation for the communities involved and will permit of a desired saving in railroad operating expense. "Such saving should be permitted," the Board continues, "where it can be reasonably made effective without resulting in material inconvenience to the users of the railroad." The present order, however, permits only temporary abandonment and requires that the railroad bridge over Toms River be retained until the close of the present summer season, at which time permission will be granted to abandon the branch permanently if the highway service has proven adequate to meet the reasonable demands of travel.

C. & N. W. Extends Highway Service

A substantial extension of its interstate motor bus service was effected by the Chicago & North Western on April 25, when its motor-coach-operating subsidiary, the Chicago & North Western Stages, began the operation of two round-trips daily between Chicago and Minneapolis, Minn., and St. Paul. The line generally runs via Waukegan, Ill., Kenosha, Wis., Racine, Milwaukee, Fond du Lac, Oshkosh, Appleton, Stevens Point, Marshfield, Chippewa Falls, and Eau Claire. Only interstate passengers are carried, no passengers being transported between local points in Wisconsin, although passengers may board the motor coaches at any point along the route in Wisconsin for passage to any point in Minnesota or Illinois.

Motor coaches leave Chicago for Minneapolis at 9 a. m. and 9 p. m. In the opposite direction the coaches leave Minneapolis at 10:30 a. m. and 9 p. m. daily. The running time of the motor buses over this route is 18½ hrs.

P. R. R. Repeats Low-Priced Pullman Excursion

Following the marked success of a special low-rate excursion run from New York to Pittsburgh, Pa., and return on April 11, the Pennsylvania will run a second excursion of the same type, to leave New York an Saturday May 9, with Pullman facilities again available at considerably less than the standard rates. The fare for this trip is the same as on the previous occasion: namely, $8 for the round trip, in coaches only, a saving of $23.64 over the regular two-way coach rate of $31.64. Passengers may, however, secure the benefit of Pullman accommodations for the exceptionally low additional charge, for an upper berth, of $2.25 each for two persons, or $4 for one. Lowers sell at $2.75 each for two persons or $5 for one. Trains leave New York at 7:45 p.m. Eastern Standard Time, and, returning, leave Pittsburgh at the same hour on Sunday, May 10, while berths may be occupied until 8 a.m.

These "de luxe" excursions, as operated on two occasions by the Pennsylvania, are similar to other trips offered during recent months by the Boston & Albany and the New York Central between Boston, Mass., and Niagara Falls, N. Y., and by the Boston & Maine, Central Vermont and Canadian National between Boston and Montreal, Que. All of these excursions, which represent a distinct innovation in comfortable passenger travel at unusually attractive rates well below the standard of 3.6 cents per mile, have proved uniformly successful. A more detailed report of the results of the earlier trips is given elsewhere in this issue.

Canadian Commissioner Dies

Commissioner Calvin Lawrence, of the Board of Railway Commissioners for Canada, died in Ottawa last week in his 75th year. He has not occupied his seat on the bench since December and, because of indifferent health spent the winter in the south. He returned to Ottawa a short time ago.

Mr. Lawrence was associated with railroading most of his life. Born near Woodstock, Ont., he moved to St. Thomas, Ont., early in life and became an employee of the Michigan Central. For years he was engaged as a locomotive engineman on that road, later becoming an officer of the Brotherhood of Locomotive Engineers. Giving up active railroading, Mr. Lawrence for a number of years was parliamentary representative of the Brotherhood in Ottawa and, in November, 1921, was appointed to the Railway Commission by the Meighen Government. During the war he was a member of the Draft Appeal Board.

Commissioner Lawrence represented labor on the Railway Board. His death creates the third vacancy, Chief Commissioner H. A. McKeown, and Deputy Commissioner Thomas Vien having resigned a short time ago. Justice C. P. Fullerton, of Manitoba is the new chairman.

Postoffice Department Objects to Questioning of Its Cost Studies

Jennings C. Wise, special assistant to the Attorney General, has filed with the Interstate Commerce Commission on behalf of the Postmaster General a memorandum objecting to delay in the proceedings before the commission on his application for the consent of the commission to a general revision of parcel post rates; the delay being granted to allow time for the protestants against the rate changes to conduct an investigation of the cost ascertainment of the department on which its proposal for increased rates was based. The memorandum takes the position that the cost ascertainment is a "legal institution" authorized by Congress and should be so recognized by the commission; that the objectors who deem it inaccurate or unfair be left to such remedy as may be had at the hands of Congress, and that no cross-examination or evidence intended to show defects in the cost ascertainment are admissible. It is stated that at a conference with Commissioner Tate on March 31 as to the future course of the hearings on the rate revision plan the question arose as to whether the cost ascertainment was subject to attack and that the objectors asked for six months in which to prosecute their own investigation of the department's cost for various classes of mail matter, as they have questioned the basis on which a deficit is shown to have resulted from the handling of parcel post. The brief says that two months were allowed for this purpose but

that Commissioner Tate requested those interested to submit their views on the question. It is declared that every day that the putting into effect of the rates is delayed costs the United States and the taxpayers $41,000 and that the public interest demands that no dilatory pleas be entertained.

Safety Section At Chicago, May 19-21

J. C. Caviston, 30 Vesey street, New York City, secretary of the Safety Section of the American Railway Association, has issued the program for the eleventh annual meeting of the Section, which is to be held at the Stevens Hotel, Chicago, on Tuesday, Wednesday and Thursday, May 19, 20 and 21. The following is a list of the speakers, each one being chairman of a committee, except where otherwise stated. The general subject is accident prevention and safety.

Tuesday Morning

Herbert A. Rowe, (D. L. & W.) chairman of the Section.
L. G. Bentley, (C. & O.)
F. W. Sargent, (President, C. & N. W.)
T. H. Carrow, (Penn.)

Tuesday Afternoon

A. V. Rohweder, (D. M. & N.)
E. A. Koschinske, (D. L. & W.) superintendent of shops.
F. B. Lewis, (U. P.) general car foreman.
P. L. Mullen (C. M. St. P. & P.) division master mechanic.
O. A. Garber, (M. P.) chief mechanical officer.
W. A. Corbett and Emory Hecox, shopmen, Columbus Shops of the Pennsylvania.

Wednesday Morning

E. R. Scoville, (B. & O.)
C. T. Bailey (O. S. L.)
Clark Hungerford, (Southern) superintendent.
C. R. Moore, General Supt. Transp'n C. N. R.
C. S. Millard, (V. P. & G. M., C. C. C. & St. L.)
Hon. Wm. N. Doak, Secretary of Labor.

Wednesday Afternoon

R. H. Aishton, President A. R. A.
D. H. Beatty, (Southern).
Lew R. Palmer, Equitable Life Assurance Society.
Following Mr. Palmer's address, there will be a round table session in which the leaders will be J. A. Barker (C. & O.); H. O. Wolfe, (C. & A.) and J. C. Mixon (A. C. L.).

Thursday Morning

D. G. Phillips (Wabash)
Robert Scott (A. C. L.) Relations with National Safety Council.
H. W. Wagner (A. T. & S. F.) chief engineer. Following Mr. Wagner's address, there will be round table discussions on motor car accidents and laying of rails, led by R. P. Long, (Wabash) and J. C. Dorsey (D. & H.).

The announcement of election of officers will be made on Wednesday afternoon and the new officers will be installed on Thursday.

Stoker Hearing Postponed

Hearings before Special Examiner J. L. Rogers of the Interstate Commerce Commission on the complaints filed by the locomotive enginemen's brotherhoods asking the commission to require the railroads to equip their locomotives generally with mechanical stokers were discontinued, for a month or so, on April 30. The hearings have been in progress for about a month and more than 100 firemen have testified as witnesses for the complainants as to the alleged need for stokers as a safety device. The adjournment was taken to allow the railroads time to compile a mass of information which the brotherhoods had asked the commission to require by subpoena *duces tecum* as to the details of accidents involving personal injury or destruction of property in which firemen were held responsible and of firemen's service records for the years 1925 and 1926. This evidence was asked for at the conclusion of complainants' direct testimony in support of their contention that the shoveling of coal interferes with other important duties of the fireman for which he is held responsible, affecting safety. The railroads objected to the volume of the material called for but the commission, after argument, decided to call for it on a somewhat reduced basis. As the railroads do not desire to begin their testimony until the presentation of the complainants' case has been completed, their side of the hearing may not begin until Fall. Meantime hearings will be started on May 11 on another complaint filed by the brotherhoods asking the commission to require that all locomotives be equipped with power reverse gear.

Two U. S. Witnesses Oppose Montreal Elevation

A Brooklyn real estate dealer, A. M Schemernhorn, and George W. Kittredge, former chief engineer of the New York Central, lines east of Buffalo, were two United States witnesses who testified at the Court House in Montreal last week before the Dominion Railway Board which for the entire week heard argument by the city of Montreal against the Canadian National's proposed northeastern belt line, the city's purpose, it is stated, being to force the road to depress its tracks for a considerable part of the mileage of that line, as against the railway's plan for an elevated line. Judgment will be given by the Board a little later.

An elevated line would be "disastrous absolutely to present conditions, absolutely blocking and bewildering in future development," in the opinion of Mr. Schemernhorn.

He took a spot about six miles from New York City Hall, where the New York Connecting Railway runs on an embankment for around two miles. In its flow to the sea, he said, population has swept past this two-mile stretch on either side, but is dammed by the railroad embankment in the centre and development stops about 800 feet north of the elevation, despite the fact that street cars run right through the area and pierce the embankment by means of a subway. To illustrate his point, Mr. Schemernhorn asked the Board to consider the letter H. Brooklyn population has flowed right down the two verticals, stops 800 feet above the cross bar (otherwise the elevated railroad), and has resumed some distance below the cross bar. The vicinity of the railroad is a dead spot. On the other hand, he cited a spot nearer the centre of Brooklyn, where trains used to run on the level and attracted nothing but cheap frame buildings; the line was depressed and up went six-story apartments.

Mr. Kittredge also favored depression as opposed to elevation and said a depressed line could be maintained and operated successfully despite winter conditions in Canada. He disagreed with the estimate that to depress the tracks in the section in question would cost $1,847,370 more than to elevate them.

He considered the depression estimate too high. But, whatever might be the excess cost of depressing the tracks, he would never recommend that the city of Montreal contribute to that higher amount, because this was the question of a new railroad running through a city "and it would be a bad principle and a bad precedent."

Louisiana & Arkansas Wages Hearings

The emergency board appointed by President Hoover to deal with the controversy between the Louisiana & Arkansas and its mechanical department employees, which threatened to develop into a strike on April 18, held hearings at Shreveport, La., from April 24 to May 1, and Judge Charles Kerr, chairman of the board, prepared to transmit a report of the controversy to the President.

The railroad on February 9 ordered a new wage scale and altered working rules for its shop craftsmen, A. L. Burford, of Wilkinson, Lewis, Wilkinson & Burford, general counsel for the L. & A. stated at the opening session of the hearing. The new wage scale of 75 cents an hour represented a reduction of 5 cents an hour. It is the same rate paid prior to August 1, 1929, and 5 cents an hour more than was paid to shop craftsmen on the Louisiana Railway & Navigation Co. before it was purchased by the L. & A. in 1929. Consolidation of the two railroads resulted on August 1, 1929, in a base scale of 80 cents an hour, representing a 10-cent increase for L. R. & N. employees and a 5-cent increase for L. & A. employees.

Adverse business conditions in 1930 led the railroad to suggest a wage cut of 5 cents an hour and a revision of working rules. Other employees of the L. & A., including all officers, have been subjected to a 12½ per cent reduction in salaries. The wage cuts were made necessary by the 1930 business depression, depletion of standing timber in the area served by the railroad, loss of oil tonnage due to competition of pipe lines, and curtailment of other revenues through motor coach and truck competition and crop shortages. B. S. Atkinson, senior vice-president, stated that the L. & A. moved 157,138 carloads of freight in 1930, which was 25,360 carloads less than in 1929. Paul Sipple, assistant to the executive vice-president, compared wage scales in other industries, asserting that the average for machinists, boilermakers and blacksmiths outside of railroad service was several cents less than the 75 cents an hour offered by the railroad.

C. P. Couch, executive vice-president of the L. & A., estimated that the wage cut would result in a monthly saving to the railroad of $2,000. Mr. Couch expressed a doubt that the employees were actually in favor of a strike, recounting conversations he had had in which numerous men had stated that they did not intend to strike. H. J. Carr, general vice-president of the Machinists' Union, followed this statement with testimony

showing that in the vote taken among the mechanical department employees 179 had voted to strike, 29 voted against striking and six ballots had been returned blank.

Mr. Carr charged that the revised working rules tend to "break down the apprentice system, give inexperienced men equal pay with experienced men and deny the right of representation of the workmen's choosing." He said that the new rules denied seniority to those who left the railroad service to engage in labor union work. B. M. Jewell, president of the railway employees department of the American Federation of Labor, called attention to the conference of labor leaders with President Hoover in the fall of 1929 when it was promised that no increases in wages would be asked during the depression period. At a previous conference railroad officers had given an assurance that wages would not be reduced, Mr. Jewell said.

Southwestern Roads Enabled to Reduce Rates on Automobiles

The Interstate Commerce Commission on May 5 made public the tenth supplemental report in the Consolidated Southwestern Cases, in which it had prescribed a general revision of class rates in the Southwest, among other things setting aside so much of the order of April 5, 1927, as requires the maintenance of prescribed relationships in and between the applicable rates in so far as the requirement embraces rates on passenger automobiles, "loose or in packages, in carloads." This is in response to a petition filed by the roads in February asking that they be permitted to establish distance scales of reduced rates on automobiles for hauls up to 500 miles, for the purpose of meeting the growing competition of large trucks for the shipment of automobiles from manufacturing and distributing points. The proposed rates, which the roads have asked authority to make effective on short notice, are to apply alternatively against the present first-class rates, and, beginning materially lower, will grade substantially into the corresponding charges under the first-class rates at 500 miles. "In view of the manner in which it is proposed to apply the rates," the commission said in the report, "it is difficult to see how any undue prejudice and preference could result therefrom. If and when the proposed rates are filed they will be subject to suspension upon good case therefore being shown."

This was the third order issued by the commission within a week designed to remove restrictions which have hampered the railways in adjusting rates to meet truck competition, although in the container case, while removing suspension orders that have delayed extensions of the service, the commission held that the roads had reduced the rates too much already.

The southwestern roads, after having been authorized to reduce rates on cotton and automobiles, have also asked the commission to re-open its petroleum rate investigation proceeding, with a view to the substitution of a more flexible rate structure than that proposed, in view of the present-day competitive conditions.

Purchases and Stores Convention Program

The program of the twelfth annual meeting of Division VI—Purchases and Stores—of the American Railway Association, to be held May 19, 20 and 21, at the Biltmore hotel, Atlanta, Ga., is as follows:

Tuesday, May 19, 9:00 a. m.

Address by M. J. Gormley, executive vice-president, A. R. A.
Report of General Committee.
Address by Chairman C. E. Walsh, purchasing agent, Pennsylvania.
Presentation and discussion of reports:
Subject 1—Stores Department Book of Rules.
Subject 2—Classification of Material.
Subject 3—Recovery, Repairs and Reclamation of Discarded Materials; Classification, Handling and Sale of Scrap.
Joint Committee on Reclamation.
Special Sales Committee.
Subject 4—Comparisons of Material Stock Reports and Store Expenses.
Subject 5—Forest Products.
Subject 6—Purchasing and Storekeeping for Motor Bus Operation.
Subject 8—Control of Shop Manufacturing Orders for Stock Materials.

Wednesday

Cost of Handling Material; paper by R. R. Jackson, division storekeeper, Wabash.
Subject 9—Fuel.
Subject 10—Most Economical Methods of Purchasing and Distributing Materials.
Subject 12—Purchasing Agents' Organization and Office Records.
Subject 13—Stationery and Printing.
Annual contest papers.
Subject 14—Fire Prevention.
Subject 15—Handling of Materials.
Subject 16—Standardization and Simplification of Stores Stocks.
Subject 19—Capacity Loading and Prompt Handling of Company Material Cars.
Subject 22—Training of Employees in Purchasing and Stores Departments.

Thursday

Hand to Mouth Buying; paper by A. L. Sorensen, manager of stores, Erie.
Subject 11—Pricing Methods.
Subject 21—Purchasing, Storage and Distribution of Equipment and Supplies Used in Dining Cars, Hotels and Commissaries.
Subject 24—Non-ferrous Metals.
Subject 25—Systematic Checking of Weights and Count of Materials Received at Destination.
Subject 26—Organization and Methods for Adoption of Standards.
Subject 17—Stores Department Safety Practices.
Subject 18—Terminal Railway Storekeeping.
Subject 7—Workable Rules in Connection with the Carrying Out of the Provisions of Section 10 of the Clayton Anti-Trust Act.
Subject 20—Joint Committee on Metric System.

L. R. Powell, Jr., receiver, Seaboard Air Line, will address the meeting but the exact time of his appearance had not been determined at the time of going to press.

International Conference on Co-Ordination of Transportation Proposed

A series of resolutions recommended by the Co-Ordination Committee of the Transport and Communications Group of the International Chamber of Commerce, proposing a joint international conference for the study of the question of the co-ordination of railway and highway transportation, was adopted at a group meeting on rail and highway transport held at Washington on May 5 in connection with the sixth general congress of the International Chamber. The committee had submitted a report and the resolutions after consideration of the findings of the International Railway Congress held at Madrid in 1930 as well as a recommendation made by the International Road Congress at Washington in October. The committee recommended the calling of a joint conference on the new development of transport methods representing not only the business interests and experts concerned in rail and road transport but also those concerned in all means of transport, "in order to consider particular measures to be taken with a view of insuring the co-ordination of the two means of transport in the interest of general economic welfare." It is proposed to appoint a special sub-committee to make, in collaboration with other international bodies, a comparison between the various methods adopted by different countries, and to collect data to be submitted to the joint conference. The committee was of the opinion that the inquiry should have the following two principal objects:

1. To determine the effects of the development of motor traffic upon railroad traffic in its various classes and to consider the nature of the resulting modifications which may be desirable in the fundamental principles governing the railroad rate schedules.

2. To arrive at a comparison between the amounts appropriated for the highway system as a whole, its upkeep, its development and administration due to motor transport, with the contribution of motor transport towards such expenses and similar comparisons for the other means of transport.

The committee considers that such an inquiry should throw light on the present and future competitive power of road transport. It stated that competition between railway and motor transport "seriously affects conditions in all countries and opens up wide questions of the relations between all means of transport and at the same time involves large questions of economic policy which overshadow the purely technical aspects of co-ordination between road and rail transport," and the committee recorded the view that "in the long run traffic will pass by that means which can offer the most efficient and cheapest service."

On motion of the United States delegation there was omitted from the resolutions a statement that, pending the final adjustment of the relations between road and rail transport, "it may be necessary for a time to continue or to impose certain limitations on both these means of transport to attenuate the abrupt effects of the new conditions on economic systems built up under previous conditions of transport."

"Competition between railways, motor transport, inland navigation and air transport, the effects of the use of water-power and of the long distance transmission of fuel by pipe-lines," the Committee said in its report, "call for the reorganization of the whole system of transport. This reorganization is rendered extremely difficult by the large amount of capital invested in each of these means of transport, by the difficulty of securing its amortization, of effecting necessary changes in industries which have followed the development of the older railway systems and whose prosperity largely depends upon freight rates, by the necessity of avoiding a too sudden shifting of industrial centres, and especially by general considerations such as the purchasing power represented by enterprises as important as the rail-

(Continued on page 934)

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equip. ment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
Akron, Canton & Youngstown	Mar.	171	$177,491	$87	$185,758	$21,142	$17,271	$12,618	$54,692	$16,230	$121,818	65.6	$63,940	$54,695	$39,915	$61,138
	3 mos.	171	478,125	249	502,161	58,231	50,179	38,219	160,229	42,516	348,901	69.5	153,260	117,366	74,515	130,888
Atchison, Topeka & Santa Fe	Mar.	9,649	9,500,562	1,781,794	12,534,767	1,870,239	2,905,036	408,270	4,148,149	426,531	9,745,377	77.7	2,789,390	1,704,673	1,697,408	1,109,561
	3 mos.	9,649	26,804,250	5,752,145	36,123,862	4,865,663	8,614,792	1,219,891	12,229,800	1,305,126	28,242,345	78.2	7,881,517	4,752,524	4,665,300	5,534,414
Gulf, Colorado & Santa Fe	Mar.	1,976	1,155,581	84,368	1,336,214	301,603	340,125	55,038	527,773	72,948	1,295,915	97.0	40,299	—56,835	—162,496	—182,954
	3 mos.	1,976	3,427,348	264,940	3,965,971	764,689	1,025,061	171,569	1,591,535	228,210	3,778,115	95.3	187,856	—104,685	—429,900	—499,934
Panhandle & Santa Fe	Mar.	1,726	740,332	63,787	872,850	207,373	218,612	20,201	304,751	40,373	780,137	89.4	92,713	35,246	—65,897	—291,791
	3 mos.	1,723	2,106,965	198,842	2,501,747	485,638	642,481	61,772	895,488	119,535	2,187,819	87.5	313,928	142,720	—163,044	—149,624
Atlanta & West Point	Mar.	93	116,719	29,523	172,390	18,784	29,824	10,391	67,798	11,246	140,171	81.3	32,219	20,753	11,418	13,625
	3 mos.	93	326,205	93,955	492,246	63,182	96,727	32,664	207,657	34,753	445,432	90.5	46,814	12,052	—13,332	45,221
Western of Alabama	Mar.	133	129,984	32,261	183,020	23,052	35,117	11,112	64,553	11,565	148,241	81.0	34,779	20,540	27,781	37,041
	3 mos.	133	366,087	99,991	525,204	80,299	117,838	34,482	194,658	36,043	473,641	90.2	51,563	15,330	35,309	97,460
Atlanta, Birmingham & Coast	Mar.	639	297,659	10,448	341,786	80,520	76,471	27,044	150,565	19,047	362,794	106.1	—21,008	—36,955	—64,498	—53,158
	3 mos.	639	774,487	31,103	903,823	225,811	218,114	81,352	434,169	57,653	1,046,119	115.7	—142,296	—190,098	—255,405	—179,350
Atlantic Coast Line	Mar.	5,162	4,901,403	1,179,324	6,755,090	773,769	1,002,068	156,829	2,051,966	170,701	4,232,912	62.7	2,522,178	1,822,002	1,603,230	1,881,318
	3 mos.	5,161	13,169,349	3,543,141	18,451,695	2,203,961	2,991,383	480,512	5,891,343	528,509	12,319,758	66.8	6,131,937	4,431,012	3,734,956	4,300,439
Charleston & Western Carolina	Mar.	342	228,896	4,585	241,622	32,913	33,558	7,627	86,358	5,903	166,337	68.8	75,285	55,285	51,824	27,474
	3 mos	342	601,633	14,174	639,258	105,811	98,333	22,535	251,571	18,788	497,016	77.7	142,242	82,220	70,592	28,095
Baltimore & Ohio	Mar.	5,653	12,066,367	1,143,233	14,205,987	1,191,178	3,004,587	505,389	5,367,577	626,134	10,828,791	76.2	3,377,196	2,688,312	2,375,434	2,764,755
	3 mos.	5,653	34,470,473	3,636,025	40,808,179	3,812,845	9,603,314	1,490,674	16,017,392	2,042,502	33,378,870	81.8	7,429,309	4,959,831	4,206,391	6,805,218
Baltimore & Ohio Chic. Term	Mar.	85	.....	.....	267,212	42,975	32,625	2,374	146,941	17,451	248,426	93.0	18,786	—33,623	64,410	42,766
	3 mos.	85	.....	.....	770,161	102,215	98,336	6,927	431,005	58,369	714,686	92.8	55,475	—122,083	168,873	216,681
Staten Island Rapid Transit	Mar.	23	58,612	107,958	173,723	15,498	13,798	2,140	94,321	15,778	141,535	81.5	32,188	14,688	—1,164	—6,205
	3 mos.	23	166,036	316,233	505,525	31,089	40,851	6,155	282,051	47,436	407,582	80.6	97,943	44,943	—461	36,729
Bangor & Aroostook	Mar.	619	842,206	65,499	935,349	120,961	139,906	6,094	181,391	29,414	479,299	51.2	456,050	374,185	353,335	405,791
	3 mos.	619	2,261,241	179,217	2,519,834	381,094	371,442	16,492	554,128	82,547	1,411,430	56.0	1,108,404	893,261	842,339	1,059,940
Belt Ry. Co. of Chicago	Mar.	53	.....	.....	466,456	30,992	43,113	3,413	230,100	9,487	317,105	68.0	149,351	85,446	150,503	147,685
	3 mos.	53	.....	.....	1,363,096	74,096	119,870	10,786	672,214	28,253	905,219	66.4	457,877	284,516	448,848	450,122
Bessemer & Lake Erie	Mar.	227	453,820	2,825	470,240	77,327	300,228	16,463	195,482	36,240	626,965	133.3	—156,725	—183,675	—182,742	—119,425
	3 mos.	227	1,283,757	9,428	1,332,202	187,014	873,094	44,465	579,402	111,257	1,797,014	134.9	—464,812	—550,673	—547,155	—173,375
Bingham & Garfield	Mar.	33	23,036	.....	23,673	6,249	4,181	1,439	7,313	4,258	23,598	99.7	75	—5,321	13,110	7,689
	3 mos.	33	71,281	.....	73,163	18,296	16,223	4,570	21,749	12,786	73,978	101.1	—815	—18,512	35,984	50,114
Boston & Maine	Mar.	2,089	3,394,721	980,665	5,136,369	807,010	682,785	80,322	1,941,641	214,570	3,747,805	73.0	1,388,564	1,135,527	913,415	977,438
	3 mos.	2,089	9,788,436	3,093,889	14,931,254	2,215,783	2,071,856	246,313	5,786,521	683,000	11,064,429	74.1	3,866,825	3,146,446	2,447,533	2,797,068
Brooklyn Eastern Dist. Term	Mar.	11	108,382	.....	110,011	10,137	11,357	98	34,098	5,824	61,514	55.9	48,497	41,134	41,134	40,192
	3 mos.	11	304,820	.....	309,279	29,202	30,137	1,076	96,761	17,537	174,715	56.5	134,566	113,878	113,878	122,514
Buffalo & Susquehanna	Mar.	253	109,871	456	125,876	25,869	36,188	2,402	39,623	7,017	111,099	88.3	14,777	12,677	21,352	32,562
	3 mos.	253	345,903	1,492	384,204	78,756	112,819	6,524	122,363	21,580	342,042	89.0	42,162	35,862	64,183	70,594
Buffalo, Rochester & Pittsburgh	Mar.	601	1,002,160	34,723	1,073,431	117,344	294,502	28,510	447,259	41,918	931,687	86.8	141,744	121,674	122,216	167,473
	3 mos.	601	2,929,926	120,099	3,153,582	378,785	888,739	94,257	1,352,295	124,710	2,845,357	90.2	308,225	247,808	290,149	525,814
Burlington-Rock Island	Mar.	367	90,717	2,606	99,322	20,720	19,379	6,205	52,219	10,342	108,291	109.0	—8,969	—16,915	—43,451	—149,624
	3 mos.	367	302,939	7,609	330,963	74,843	54,018	19,235	168,377	32,323	347,553	105.0	—16,590	—40,432	—121,656	—342,071
Canadian Pacific Lines in Maine	Mar.	233	232,452	26,686	272,541	22,719	64,876	7,980	108,603	4,563	208,741	76.6	63,800	51,800	33,767	54,644
	3 mos.	233	675,662	73,301	787,203	65,411	188,399	23,277	335,289	13,736	626,112	79.5	161,091	125,091	58,789	117,568
Canadian Pacific Lines in Vermont	Mar.	85	86,195	20,811	128,710	13,002	33,804	2,155	81,313	3,535	133,809	103.9	—5,099	—9,119	—36,133	—43,380
	3 mos.	85	220,867	66,522	347,187	35,612	93,874	6,278	238,341	9,270	383,307	110.4	—36,120	—48,180	—128,359	—109,441
Central of Georgia	Mar.	1,944	1,367,315	194,776	1,782,761	129,762	265,216	63,809	704,110	82,250	1,262,263	70.8	520,498	401,837	384,774	396,540
	3 mos.	1,944	3,551,604	596,570	4,713,839	318,166	756,420	198,456	1,973,960	244,840	3,539,355	75.1	1,174,484	824,889	784,373	978,885
Central New Jersey	Mar.	692	2,549,451	508,158	3,290,198	305,480	703,434	55,450	1,415,930	111,883	2,614,684	79.5	675,514	432,916	341,901	376,768
	3 mos.	692	7,837,984	1,560,273	10,018,781	889,763	2,225,338	162,876	4,288,317	354,646	7,988,866	79.7	2,029,915	1,420,565	1,137,242	1,555,547
Central Vermont	Mar.	456	496,925	61,167	605,833	61,377	119,177	18,348	255,916	24,377	481,093	79.4	124,750	115,393	126,610	105,287
	3 mos.	456	1,301,239	228,655	1,675,584	200,833	338,732	51,883	758,500	75,030	1,430,585	85.4	244,999	196,965	237,660	297,218
Chesapeake & Ohio	Mar.	3,119	8,831,897	342,531	9,711,979	1,417,401	1,956,200	174,440	2,611,492	325,848	6,505,793	67.0	3,206,186	2,335,342	2,366,291	2,157,182
	3 mos.	3,119	26,433,366	1,052,423	28,798,441	4,327,332	5,780,172	480,455	7,828,117	1,030,061	19,520,275	67.8	9,278,166	6,672,578	6,867,428	8,648,812
Chicago & Alton	Mar.	1,028	1,228,948	277,170	1,678,013	171,240	369,567	65,271	672,594	59,233	1,358,301	80.9	319,712	205,354	31,867	91,150
	3 mos.	1,028	3,454,546	893,033	4,839,102	468,451	1,187,500	211,376	2,029,014	196,786	4,154,200	85.8	684,902	341,480	—122,385	225,315
Chicago & Eastern Illinois	Mar.	938	1,124,144	159,829	1,416,023	173,622	289,340	68,057	616,511	65,704	1,228,076	86.7	187,947	72,662	—68,839	—42,276
	3 mos.	938	3,179,785	501,770	4,035,642	532,189	933,478	218,171	1,844,990	213,406	3,786,488	93.8	249,154	—106,683	—510,747	—185,736
Chicago & Illinois Midland	Mar.	131	227,965	4,314	240,910	24,575	47,875	20,238	70,655	19,788	183,086	76.0	57,824	48,988	38,966	52,862
	3 mos.	131	677,032	9,832	706,422	76,265	169,468	60,574	226,019	60,526	593,392	84.0	113,030	96,659	67,843	89,390

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equip. ment.	Traffic.	Trans-portation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
Chicago & North Western	Mar.	8,458	$6,544,258	$1,189,693	$8,725,432	$1,049,374	$1,642,013	$181,694	$3,655,868	$380,261	$6,953,408	79.7	$1,771,934	$1,046,041	$831,137	$770,172
	3 mos.	8,458	18,603,561	3,629,697	25,044,350	2,802,503	5,022,020	549,880	10,859,880	1,146,351	20,534,157	82.0	4,510,193	2,332,854	1,721,700	2,258,229
Chicago, Burlington & Quincy	Mar.	9,319	7,953,449	901,295	9,849,837	968,497	1,599,992	253,851	3,418,343	359,245	6,667,139	67.7	3,182,698	2,308,640	2,047,495	2,555,104
	3 mos.	9,321	23,371,215	2,759,944	29,066,639	2,657,796	4,787,532	732,091	10,120,577	1,085,315	19,586,223	67.4	9,480,416	6,794,502	5,973,799	7,524,138
Chicago Great Western	Mar.	1,495	1,453,298	108,465	1,679,437	144,106	207,988	86,726	645,597	62,801	1,151,361	68.6	528,076	444,645	265,142	236,637
	3 mos.	1,495	4,123,822	340,998	4,801,434	412,027	566,995	242,060	1,898,902	177,345	3,311,251	69.0	1,490,183	1,231,028	671,807	527,490
Chicago, Indianapolis & Louisville	Mar.	647	810,560	99,254	1,012,013	86,926	219,350	36,769	406,513	37,712	795,088	78.6	216,925	172,321	59,590	90,316
	3 mos.	647	2,343,041	296,133	2,929,701	269,080	636,877	105,075	1,204,377	107,233	2,350,659	80.2	579,042	398,692	70,658	253,257
Chic., Mil., St. Paul & Pacific	Mar.	11,323	8,145,962	740,585	9,829,071	1,189,815	2,160,054	285,274	3,892,135	341,905	7,857,719	79.9	1,971,352	1,180,913	788,213	928,009
	3 mos.	11,322	22,738,150	2,236,746	27,747,873	3,001,509	6,082,303	861,501	11,475,537	1,044,422	22,469,873	81.0	5,278,000	2,906,744	1,705,912	2,758,830
Chicago River & Indiana	Mar.	20	.....	.....	486,758	45,000	40,000	1,786	170,181	17,386	274,353	56.4	212,405	175,122	246,284	241,738
	3 mos.	20	.....	.....	1,398,423	135,000	120,000	5,480	479,402	53,031	792,913	56.7	605,510	497,317	714,198	743,035
Chicago, Rock Island & Pacific	Mar.	7,593	6,461,772	935,641	8,215,001	857,360	1,578,063	225,390	3,218,268	350,889	6,329,645	77.0	1,885,356	1,355,633	972,487	1,695,927
	3 mos.	7,593	18,478,472	2,800,111	23,606,829	2,356,676	4,440,259	696,539	9,449,977	1,030,954	18,272,336	77.4	5,334,493	3,758,275	2,593,925	2,883,157
Chicago, Rock Island & Gulf	Mar.	625	383,830	46,111	471,340	60,319	43,292	20,542	156,632	21,667	304,991	64.7	166,349	145,331	120,832	149,669
	3 mos.	625	1,162,677	145,021	1,414,401	182,239	120,394	60,419	467,785	65,029	903,359	63.9	511,042	433,786	354,725	300,377
Chic., St. Paul, Minn. & Omaha	Mar.	1,736	1,278,201	203,414	1,610,598	216,742	312,111	38,831	742,183	82,420	1,404,470	87.2	206,128	106,521	41,770	146,673
	3 mos.	1,736	3,647,858	577,109	4,615,537	631,973	920,587	117,063	2,234,527	249,437	4,185,970	90.7	429,567	132,802	—71,088	538,142
Clinchfield R. R.	Mar.	309	503,832	7,306	519,701	49,772	117,095	19,845	108,260	16,818	311,562	60.0	208,139	143,138	183,366	193,173
	3 mos.	309	1,431,826	22,694	1,480,490	179,824	364,005	60,343	323,087	52,960	979,856	66.2	500,634	305,627	478,073	625,025
Colorado & Southern	Mar.	1,037	534,121	44,237	642,057	81,360	157,048	17,369	250,494	40,644	547,893	85.3	94,164	26,300	9,500	86,258
	3 mos.	1,037	1,709,934	146,836	2,050,260	219,262	466,305	47,197	778,711	121,383	1,637,788	79.9	412,472	210,674	157,882	405,495
Ft. Worth & Denver City	Mar.	696	466,933	66,905	577,890	65,411	103,664	19,720	187,176	36,481	414,299	71.7	163,591	123,484	109,599	140,405
	3 mos.	696	1,357,774	211,158	1,697,858	180,562	302,445	57,396	591,093	111,715	1,250,503	73.7	447,355	336,370	293,939	403,398
Wichita Valley	Mar.	270	36,343	1,300	41,248	15,310	3,533	4	23,030	1,625	43,477	105.4	—2,299	—9,425	—20,254	—12,369
	3 mos.	270	127,144	4,621	140,033	33,833	11,221	30	69,311	5,336	119,488	85.3	20,545	—969	—32,771	—27,082
Columbus & Greenville	Mar.	167	80,889	5,960	91,085	13,761	13,155	4,214	37,824	11,154	80,106	88.0	10,979	7,970	8,820	17,279
	3 mos.	167	228,233	19,145	262,394	40,781	40,317	11,639	110,596	33,453	236,766	90.2	25,628	20,466	22,686	65,483
Conemaugh & Black Lick	Mar.	20	32,996	.....	75,766	11,697	24,343	555	54,262	3,553	94,410	124.6	—18,644	—19,544	—16,067	—12,385
	3 mos.	20	89,904	.....	209,177	30,223	57,436	1,697	150,171	10,520	250,047	119.5	—40,870	—43,570	—34,747	32,125
Delaware & Hudson	Mar.	882	2,200,101	152,424	2,520,295	416,404	692,274	59,735	1,008,698	160,409	2,343,923	93.0	176,372	76,020	88,337	208,421
	3 mos.	882	6,838,647	522,930	7,839,444	1,353,958	2,037,902	169,423	3,097,268	467,267	7,144,064	91.1	695,380	394,209	456,373	1,104,541
Delaware, Lackawanna & Western	Mar.	998	3,623,597	687,560	5,016,896	435,573	926,889	131,745	2,199,592	177,765	3,911,029	78.0	1,105,867	660,439	649,029	588,489
	3 mos.	998	10,757,780	2,173,538	14,871,808	1,347,913	2,792,095	397,611	6,662,193	529,771	11,851,612	79.7	3,020,196	1,714,484	1,705,482	2,023,781
Denver & Rio Grande Western	Mar.	2,549	1,666,437	121,659	1,918,495	198,244	463,001	52,477	600,222	87,454	1,414,619	73.7	503,876	338,710	364,431	494,568
	3 mos.	2,562	5,027,362	371,159	5,765,861	676,332	1,344,859	163,375	1,836,771	262,981	4,329,201	75.1	1,436,660	941,411	1,040,938	1,324,195
Denver & Salt Lake	Mar.	232	124,022	10,087	146,990	30,307	37,157	1,830	31,991	10,043	111,328	75.7	35,662	19,651	30,424	—8,775
	3 mos.	232	416,693	27,559	484,052	82,596	115,889	5,631	97,173	31,904	333,193	68.8	150,859	102,847	133,470	330,887
Detroit & Mackinac	Mar.	242	53,872	4,931	67,308	9,622	10,444	1,315	26,633	4,354	52,367	77.8	14,941	6,370	3,539	—1,309
	3 mos.	242	145,839	15,342	186,048	31,192	32,207	4,008	77,980	12,810	158,193	85.0	27,855	2,074	—356	—37,256
Detroit & Toledo Shore Line	Mar.	50	295,835	.....	300,185	36,182	27,675	7,596	79,529	7,774	158,756	52.9	141,429	120,236	63,322	78,764
	3 mos.	50	873,806	.....	885,720	76,951	83,215	22,514	235,010	23,816	441,505	49.8	444,215	367,942	194,808	347,000
Detroit Terminal	Mar.	19	.....	.....	105,844	6,307	10,236	—	54,475	4,165	75,183	71.0	30,661	17,486	1,271	18,119
	3 mos.	19	.....	.....	281,431	24,671	28,777	6	147,252	12,342	213,048	75.7	68,383	27,211	10,085	60,059
Detroit, Toledo & Ironton	Mar.	500	706,312	946	723,606	74,708	104,432	13,043	204,171	31,225	427,235	59.0	296,371	249,630	222,278	506,623
	3 mos.	502	1,943,218	3,272	1,989,372	226,642	270,989	38,731	599,564	96,059	1,230,243	61.8	759,129	621,308	536,632	1,287,733
Duluth, Missabe & Northern	Mar.	564	92,509	3,356	116,221	155,680	326,650	3,983	187,907	38,041	712,232	612.8	—596,011	—673,244	—669,021	—665,890
	3 mos.	564	287,853	10,351	358,114	414,047	905,026	12,968	559,996	112,420	2,004,061	559.6	—1,645,947	—1,878,248	—1,883,920	—1,939,106
Duluth, Winnipeg & Pacific	Mar.	178	89,911	7,328	102,816	21,312	34,825	4,425	57,734	6,597	126,149	122.7	—23,333	—28,474	—21,374	9,589
	3 mos.	178	321,881	19,418	355,740	62,350	106,871	13,468	182,878	21,958	391,265	102.0	—35,525	—53,363	—30,044	42,067
Elgin, Joliet & Eastern	Mar.	447	1,390,766	11	1,523,752	171,979	345,251	15,309	598,476	55,340	1,186,529	77.9	337,223	220,845	133,153	334,285
	3 mos.	447	3,945,523	13	4,317,327	505,844	987,079	45,029	1,751,100	162,393	3,451,452	79.9	865,875	516,777	255,089	819,321
Erie Railroad	Mar.	2,046	5,922,167	609,911	7,134,143	729,981	1,493,121	160,084	2,727,864	272,868	5,404,424	75.8	1,729,719	1,309,527	1,296,853	759,713
	3 mos.	2,046	16,801,698	1,904,985	20,355,338	2,030,968	4,519,487	475,031	7,981,508	845,248	15,936,366	78.3	4,418,972	3,351,356	3,195,604	2,662,215
Chicago & Erie	Mar.	269	887,623	33,740	996,193	104,542	102,596	28,296	288,150	40,522	564,025	56.6	432,168	376,048	136,988	172,949
	3 mos.	269	2,539,105	103,758	2,816,621	293,801	334,509	84,300	855,110	127,499	1,693,083	60.1	1,123,538	955,394	188,559	462,044

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of—Way and structures.	Equip. ment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
New Jersey & New York	Mar.	45	$25,943	$82,131	$111,671	$9,512	$9,137	$1,359	$50,978	$3,812	$74,798	67.0	$36,873	$32,498	$2,865	—$23,629
	3 mos.	45	66,147	248,287	324,691	26,989	53,851	4,066	165,059	10,697	260,651	80.3	64,040	50,831	—38,875	—82,571
N. Y., Susquehanna & Western	Mar.	131	319,954	33,678	391,471	31,967	40,853	4,711	157,966	13,844	249,326	63.7	142,145	109,445	80,884	25,817
	3 mos.	131	977,041	101,453	1,180,601	89,372	141,032	14,062	470,786	39,009	754,181	63.9	426,420	327,967	231,400	91,528
Florida East Coast	Mar.	864	616,802	482,738	1,290,255	151,717	201,152	29,881	333,109	45,907	786,754	61.0	503,501	387,150	325,522	583,098
	3 mos.	864	1,780,824	1,401,857	3,702,775	420,129	543,389	104,101	961,818	142,275	2,253,786	60.9	1,448,989	1,099,090	906,086	1,478,276
Fort Smith & Western	Mar.	249	59,357	3,380	68,034	12,199	11,942	4,784	29,400	5,513	62,746	92.2	5,288	1,683	—7,105	—1,838
	3 mos.	249	197,393	10,687	227,418	39,425	40,543	14,842	94,789	17,261	203,587	89.5	23,831	13,002	—12,428	18,723
Galveston Wharf	Mar.	13	.....	.....	127,612	44,386	5,224	4,682	25,505	7,994	100,716	78.9	26,896	3,896	3,968	—2,958
	3 mos.	13	.....	.....	390,391	103,611	13,710	11,877	77,714	22,995	268,853	68.9	121,538	52,303	54,427	23,550
Georgia R. R.	Mar.	328	325,864	28,638	382,985	34,705	66,336	21,235	159,927	23,390	305,859	79.9	77,126	69,238	79,901	72,122
	3 mos.	328	855,990	83,256	1,022,321	103,263	197,347	64,000	481,877	69,909	917,217	89.7	105,104	88,991	119,403	157,400
Georgia & Florida	Mar.	463	156,981	4,863	168,630	36,262	20,840	10,713	59,715	7,836	135,520	80.4	33,110	25,610	18,969	18,134
	3 mos.	463	342,717	12,483	375,125	91,477	65,105	32,264	160,771	23,739	373,847	99.7	1,278	—21,224	—31,277	—8,461
Grand Trunk Western	Mar.	1,019	1,684,636	98,714	1,900,424	207,935	375,907	64,863	838,705	108,057	1,605,766	84.5	294,658	173,580	16,320	305,273
	3 mos.	1,019	4,650,595	331,259	5,364,605	578,524	1,087,612	197,323	2,426,566	317,169	4,647,200	86.6	717,405	354,112	—262,011	700,181
Can. Nat. Lines in New England	Mar.	172	90,261	20,102	130,284	24,922	37,890	5,330	92,678	7,989	172,053	132.06	—41,769	—56,679	—107,206	—68,280
	3 mos.	172	330,333	50,320	428,728	73,658	111,930	16,343	258,972	26,373	498,687	116.32	—69,959	—116,124	—269,376	—216,021
Great Northern	Mar.	8,370	5,266,307	465,599	6,360,996	723,060	1,446,032	220,930	2,241,921	241,052	4,944,380	77.7	1,416,616	713,841	574,260	506,355
	3 mos.	8,370	14,324,873	1,491,956	17,536,396	1,750,914	4,147,716	669,629	6,790,601	702,410	14,214,847	81.1	3,321,549	1,292,807	836,736	538,325
Green Bay & Western	Mar.	234	117,198	1,430	121,768	17,949	30,106	5,602	52,653	2,881	109,096	89.6	12,672	3,672	2,657	34,308
	3 mos.	234	340,373	4,938	354,391	60,380	76,789	16,759	153,325	9,324	316,381	89.3	38,010	11,010	8,610	78,130
Gulf & Ship Island	Mar.	307	118,080	22,621	167,530	40,833	35,370	4,306	92,504	6,568	180,376	107.7	—12,846	—42,869	—58,279	49,917
	3 mos.	307	325,954	60,153	447,657	122,891	86,066	13,097	247,743	20,685	493,606	110.3	—45,949	—136,001	—171,739	48,619
Gulf, Mobile & Northern	Mar.	733	315,728	12,596	345,634	57,372	65,270	26,956	134,395	22,021	306,250	88.61	39,384	12,637	—12,006	84,056
	3 mos.	733	982,052	37,985	1,072,846	173,996	198,235	82,188	404,118	68,757	927,971	86.50	144,875	62,415	—13,233	105,635
Illinois Central	Mar.	5,018	6,986,496	1,139,641	8,857,476	1,019,909	2,077,101	236,746	3,639,703	349,509	7,395,837	83.5	1,461,639	808,177	681,226	1,768,945
	3 mos.	5,018	20,131,918	3,595,636	25,730,937	2,944,444	6,190,599	768,941	10,681,234	1,064,497	21,863,312	85.0	3,867,625	1,896,464	1,566,946	4,525,028
Yazoo & Mississippi Valley	Mar.	1,681	1,222,911	127,324	1,446,511	222,234	270,101	40,920	654,597	63,041	1,256,026	86.8	190,485	25,370	—97,715	298,719
	3 mos.	1,685	3,516,279	400,074	4,195,263	705,287	812,136	125,006	1,966,178	195,566	3,811,679	90.9	383,584	—105,194	—470,093	823,879
Illinois Central System	Mar.	6,700	8,209,407	1,266,965	10,303,987	1,242,143	2,347,202	277,666	4,294,300	412,550	8,651,863	84.0	1,652,124	833,547	583,511	2,071,003
	3 mos.	6,704	23,648,197	3,995,710	29,926,200	3,649,731	7,002,735	893,947	12,647,412	1,260,063	25,674,991	85.8	4,251,209	1,791,270	1,096,853	5,357,191
Illinois Terminal	Mar.	559	448,419	92,187	568,653	58,141	68,642	19,155	186,217	37,200	368,255	64.76	200,398	169,797	143,325	130,459
	3 mos.	559	1,230,941	266,218	1,576,361	163,688	213,080	57,077	540,612	118,865	1,086,136	69.09	487,225	393,392	315,448	325,493
Kansas City Southern	Mar.	784	992,731	46,036	1,165,322	99,159	198,608	56,987	356,093	68,532	780,278	67.0	385,044	295,893	260,816	297,766
	3 mos.	784	2,877,415	136,870	3,363,499	251,388	566,023	168,550	1,026,169	206,817	2,206,316	65.6	1,157,183	889,653	801,355	778,171
Texarkana & Ft. Smith	Mar.	99	132,418	3,109	150,093	17,995	9,042	6,463	44,069	10,364	90,145	60.1	59,948	51,308	32,357	10,451
	3 mos.	99	360,722	9,103	411,742	49,569	33,863	21,454	130,531	30,684	272,723	66.2	139,019	113,065	46,250	72,294
Kansas, Oklahoma & Gulf	Mar.	326	212,589	1,313	218,139	25,394	21,793	14,316	53,846	11,429	126,739	58.1	91,400	72,990	54,429	72,564
	3 mos.	326	609,010	3,757	626,359	58,019	67,375	41,553	156,936	34,912	357,096	57.0	269,263	213,710	158,836	264,136
Lake Superior & Ishpeming	Mar.	160	40,822	786	44,334	19,746	28,849	471	28,770	7,245	85,081	191.9	—40,747	—57,886	—60,124	—45,527
	3 mos.	160	138,311	2,368	150,911	61,490	88,540	1,683	88,526	21,050	261,289	173.1	—110,378	—161,798	—170,371	—134,532
Lake Terminal	Mar.	12	.....	.....	61,778	15,792	9,097	—	33,895	1,695	60,479	97.9	1,299	—3,381	—5,595	—12,500
	3 mos.	12	.....	.....	159,228	35,502	32,003	—	96,247	4,463	168,215	105.6	—8,987	—23,027	—29,253	—43,960
Lehigh & Hudson River	Mar.	96	150,336	660	160,155	27,191	23,336	3,914	60,874	9,771	125,086	78.1	35,069	23,056	4,625	16,979
	3 mos.	96	462,676	2,381	491,458	59,353	77,822	10,551	187,220	29,237	364,183	74.1	127,275	88,033	38,447	37,236
Lehigh & New England	Mar.	216	309,216	793	313,680	43,802	82,181	5,602	123,127	22,476	277,188	88.4	36,492	28,713	41,438	51,506
	3 mos.	216	1,026,512	2,492	1,038,787	139,968	224,578	15,635	385,638	70,847	836,666	80.5	202,121	168,383	203,965	174,383
Lehigh Valley	Mar.	1,361	3,694,074	331,415	4,396,612	410,854	1,114,849	128,076	1,900,024	131,818	3,708,854	84.4	687,758	400,262	306,026	305,007
	3 mos.	1,361	11,107,810	1,064,775	13,208,800	984,524	3,177,058	387,174	5,792,922	409,930	10,817,690	81.9	2,391,110	1,521,063	1,229,025	1,547,217
Louisiana & Arkansas	Mar.	608	400,861	12,478	441,154	74,531	62,888	20,387	133,720	25,126	316,917	71.8	124,237	78,222	63,738	156,290
	3 mos.	608	1,154,646	36,997	1,265,838	206,921	166,762	63,923	392,395	71,419	902,711	71.3	363,127	224,895	182,767	296,928
Louisiana, Arkansas & Texas	Mar.	202	57,544	1,123	61,383	16,549	8,373	2,968	24,789	4,601	57,218	93.2	4,165	—245	—7,787	—15,591
	3 mos.	202	181,774	3,547	193,033	45,110	23,964	10,392	81,340	14,469	175,208	90.8	17,825	5,496	—18,568	—73,298
Louisville & Nashville	Mar.	5,268	6,722,802	725,714	8,014,184	1,164,522	1,691,156	220,141	2,940,558	387,970	6,456,837	80.6	1,557,347	1,068,602	1,076,772	522,808
	3 mos.	5,269	19,422,692	2,289,447	23,410,105	3,452,778	5,367,875	759,840	8,846,207	1,170,993	19,748,974	84.4	3,661,131	2,201,799	2,239,381	3,073,266

Continued on Next Left Hand Page

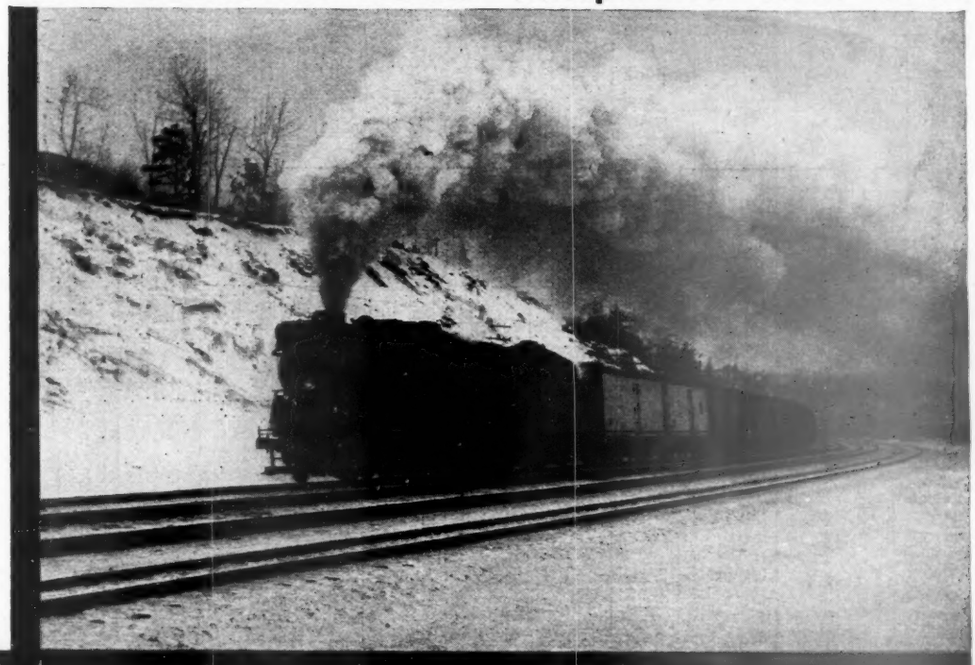
■ Operating conditions today demand the pulling of heavier trains at higher speeds.

■ Only by using locomotives capable of producing higher horsepower can train movement be speeded up without reducing tonnage.

■ Super-Power Locomotives start maximum train loads for a given weight on drivers, and have the POWER to pull such loads at higher speeds.

RESULT—*Lower Operating Costs*

LIMA LOCOMOTIVE WORKS • Incorporated • LIMA • OHIO



SUPER-POWER LOCOMOTIVES CUT OPERATING COSTS

LIMA LOCOMOTIVE WORKS INCORPORATED

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
Maine Central	Mar.	1,121	$1,050,041	$170,789	$1,340,805	$179,226	$227,827	$16,491	$541,844	$46,284	$1,012,552	75.5	$328,253	$242,246	$171,404	$318,652
	3 mos.	1,121	3,141,775	521,659	3,995,745	553,526	694,787	48,343	1,643,101	136,660	3,078,002	77.0	917,743	646,476	450,544	859,913
Midland Valley	Mar.	363	162,687	2,885	171,396	32,051	24,356	5,443	49,711	11,424	122,694	71.6	48,702	37,412	24,496	70,635
	3 mos.	363	484,015	8,681	513,651	73,119	63,559	16,700	152,387	36,708	341,737	66.5	171,914	132,498	95,537	193,372
Minneapolis & St. Louis	Mar.	1,627	824,267	33,324	917,343	107,870	173,310	37,980	422,587	44,609	785,183	85.6	132,160	94,373	83,266	—69,520
	3 mos.	1,627	2,227,053	100,488	2,495,363	264,368	547,370	113,025	1,261,125	143,708	2,325,610	93.2	169,753	22,606	—58,208	—189,360
Minneapolis, St. Paul & S. S. Marie	Mar.	4,379	2,094,505	160,784	2,458,342	315,042	569,468	73,862	1,066,175	121,631	2,153,580	87.6	304,762	82,106	—57,249	—32,981
	3 mos.	4,379	5,903,284	505,175	7,003,869	888,641	1,674,808	219,200	3,138,596	365,745	6,313,267	90.1	690,602	38,698	—351,902	—307,450
Duluth, South Shore & Atlantic	Mar.	560	231,089	20,879	269,812	32,382	50,146	7,905	116,357	10,775	219,482	81.3	50,330	20,334	14,636	14,540
	3 mos.	560	623,865	72,130	747,756	92,315	134,991	23,497	343,476	30,436	630,361	84.3	117,395	23,381	3,424	27,037
Spokane International	Mar.	163	56,851	4,064	66,031	10,559	6,845	3,258	24,928	5,914	52,149	79.0	13,882	8,821	6,159	—2,849
	3 mos.	163	156,691	11,299	182,214	34,705	20,064	9,841	75,919	17,204	159,568	87.6	22,646	7,525	—2,387	—7,665
Mississippi Central	Mar.	150	86,748	2,142	91,896	15,837	14,702	8,545	26,946	6,298	72,328	78.7	19,568	13,916	10,443	32,043
	3 mos.	150	243,523	6,738	258,550	43,714	44,503	27,258	81,249	20,264	216,988	83.9	41,562	24,526	14,457	59,619
Missouri & North Arkansas	Mar.	364	112,980	2,333	121,231	18,599	13,360	9,711	45,057	7,586	94,313	77.8	26,918	24,490	12,210	22,368
	3 mos.	364	292,689	7,061	318,362	74,032	44,519	29,392	134,999	23,532	305,858	96.1	12,504	5,044	—28,263	31,082
Missouri-Illinois	Mar.	202	108,000	859	110,913	16,036	22,908	3,352	36,262	6,437	84,973	76.6	25,940	19,440	10,631	37,093
	3 mos.	202	310,006	2,878	319,157	42,045	77,005	10,548	108,421	20,072	257,775	80.8	61,382	41,880	13,543	75,488
Missouri-Kansas-Texas Lines	Mar.	3,188	2,225,716	314,036	2,842,378	311,555	483,292	121,762	1,000,396	158,215	2,091,654	73.6	750,724	547,729	349,469	576,912
	3 mos.	3,188	6,458,241	953,200	8,278,625	925,534	1,482,066	367,351	3,004,193	492,060	6,328,839	76.4	1,949,786	1,341,072	776,482	1,373,814
Missouri Pacific	Mar.	7,450	7,273,817	623,396	8,621,537	1,185,305	1,469,667	275,135	3,140,103	358,257	6,427,327	74.6	2,194,210	1,757,629	1,358,800	1,659,402
	3 mos.	7,450	20,455,398	1,969,948	24,536,002	2,737,787	4,167,484	849,099	9,171,345	1,060,997	18,017,789	73.4	6,518,213	5,207,762	4,160,299	4,959,956
Gulf Coast Lines	Mar.	1,037	1,005,942	82,602	1,148,713	163,976	182,475	43,305	322,497	60,797	771,512	67.16	377,201	328,061	208,300	463,183
	3 mos.	1,037	2,825,516	267,419	3,272,534	464,883	572,909	135,963	977,538	178,254	2,321,224	70.93	957,310	802,879	480,850	1,190,075
International Great Northern	Mar.	1,159	1,603,798	111,167	1,823,454	256,717	250,454	37,510	675,095	66,347	1,253,545	68.75	569,909	536,962	356,882	8,249
	3 mos.	1,159	3,447,217	333,680	4,112,936	604,883	638,198	118,728	1,646,313	196,226	3,198,107	77.76	914,829	794,840	437,678	17,594
San Antonio, Uvalde & Gulf	Mar.	316	159,356	9,634	177,999	43,493	20,867	5,364	36,933	6,932	113,825	63.9	64,174	59,591	29,021	49,689
	3 mos.	316	412,698	32,764	476,798	113,744	60,250	16,707	93,858	19,975	304,395	63.8	172,403	158,470	72,368	58,197
Mobile & Ohio	Mar.	1,152	905,470	34,008	994,878	119,844	187,872	52,909	392,113	50,990	802,461	80.7	192,417	115,940	49,718	179,903
	3 mos.	1,152	2,464,926	111,761	2,739,398	366,245	538,006	157,330	1,146,457	150,596	2,351,780	85.6	387,618	211,503	34,531	256,223
Monongahela	Mar.	177	421,776	3,099	427,745	60,000	45,000	1,280	107,125	9,845	223,250	52.2	204,495	193,133	105,521	85,873
	3 mos.	177	1,233,257	9,969	1,251,752	180,000	135,000	3,961	321,787	31,730	672,022	53.7	579,730	536,760	285,586	311,879
Monongahela Connecting	Mar.	6	.....	.....	104,135	11,446	26,665	300	54,710	2,935	96,056	92.2	8,079	1,024	774	35,419
	3 mos.	6	.....	.....	290,790	34,458	77,243	900	163,035	9,008	284,644	97.9	6,146	—12,925	—14,297	70,423
Montour	Mar.	57	168,062	.....	168,224	10,340	44,123	1,335	51,650	7,454	114,848	68.3	53,376	51,307	61,823	55,179
	3 mos.	57	524,483	.....	526,272	34,369	131,687	4,226	159,555	22,467	352,250	66.9	174,022	167,816	204,575	180,126
Nashville, Chatt. & St. Louis	Mar.	1,203	1,228,536	124,680	1,490,337	228,466	295,090	75,071	559,771	76,041	1,237,481	83.0	252,856	188,713	168,413	264,961
	3 mos.	1,203	3,274,690	420,374	4,104,391	648,791	858,292	229,891	1,619,364	233,880	3,609,118	87.9	495,273	318,004	257,911	610,625
Nevada Northern	Mar.	165	40,264	2,160	47,475	10,234	3,998	896	13,455	5,133	33,716	71.0	13,759	6,125	7,954	26,418
	3 mos.	165	110,636	6,547	131,927	34,221	13,311	2,921	40,448	14,336	105,184	79.7	26,743	4,460	10,057	73,293
Newburgh & South Shore	Mar.	6	.....	.....	88,988	28,025	29,601	.....	47,808	7,207	112,641	126.6	—23,653	—36,667	—35,163	2,100
	3 mos.	6	.....	.....	263,923	70,556	79,950		139,075	21,290	310,871	117.8	—46,948	—85,992	—79,127	—28,016
New Orleans Great Northern	Mar.	264	173,061	9,181	187,469	19,145	35,685	13,753	44,467	12,205	125,255	66.8	62,214	51,622	42,707	41,438
	3 mos.	264	495,091	27,352	538,958	60,670	90,473	42,733	157,634	33,998	385,508	71.5	153,450	122,326	72,881	86,515
New Orleans Terminal	Mar.	20	2,045	.....	99,670	17,039	8,163	...	45,235	1,525	71,962	72.2	27,708	15,758	—11,847	46,053
	3 mos.	20	6,015	.....	337,259	50,860	31,993	...	151,061	4,496	238,410	70.7	98,849	62,981	—2,146	103,249
New York Central	Mar.	11,421	23,044,715	7,192,646	34,578,303	3,875,289	7,105,625	727,512	13,042,958	1,406,789	26,682,137	77.2	7,896,166	5,096,327	3,909,290	4,734,021
	3 mos.	11,421	64,441,229	22,905,806	99,332,081	11,519,790	21,950,110	2,145,385	38,456,882	4,105,706	79,843,352	80.4	19,488,729	11,037,195	7,337,301	14,455,668
Indiana Harbor Belt	Mar.	118	.....	.....	842,279	70,000	95,000	4,816	483,128	27,591	700,042	80.3	172,237	119,382	179,533	165,147
	3 mos.	118	.....	.....	2,425,347	210,000	285,000	14,049	1,208,979	85,150	1,870,482	77.1	554,865	418,439	385,707	506,415
Pittsburgh & Lake Erie	Mar.	235	1,544,778	116,702	1,715,643	134,794	491,170	31,800	661,689	78,002	1,401,425	81.7	314,218	195,718	365,114	501,139
	3 mos.	234	4,349,376	359,558	4,854,836	401,536	1,439,925	98,608	1,905,465	237,896	4,094,886	84.4	759,950	405,640	974,457	1,530,047
New York, Chicago & St. Louis	Mar.	1,698	3,371,090	113,926	3,616,709	353,677	612,779	126,764	1,386,065	128,540	2,504,170	69.2	1,112,539	896,967	609,791	604,409
	3 mos.	1,698	9,085,829	349,865	9,761,847	1,019,155	1,846,617	362,758	3,799,541	393,013	7,434,356	76.2	2,327,491	1,659,438	806,505	1,574,051
N. Y., New Haven & Hartford	Mar.	2,121	4,790,123	2,881,654	8,734,686	966,217	1,390,658	94,165	3,075,809	296,508	5,931,851	67.9	2,802,835	2,250,519	1,631,023	1,848,344
	3 mos.	2,121	13,397,097	8,933,927	25,255,976	2,661,387	4,147,847	269,969	8,913,777	888,578	17,377,040	68.8	7,878,936	6,221,514	4,408,533	5,635,324

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LIMITED CUT-OFF SWITCHERS

In Transfer Service

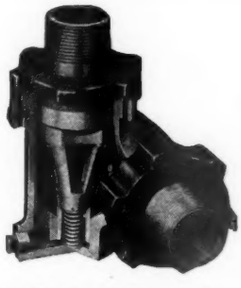
Reduce Fuel Requirements 12.5%

DURING 1930 four new 0-8-0 type switchers were placed in service by the Kentucky & Indiana Terminal Railroad. Each included the Limited Cut-Off.

A comparison of fuel requirements between these new locomotives and similar 0-8-0 type switchers without the Limited Cut-Off bought in 1926 clearly demonstrates the savings in fuel the Limited Cut-Off effects.

Average monthly service for a thirty-day month totals 402 hours. For this time, the long cut-off locomotives required 316,000 lbs. of fuel, while the new 65% Limited Cut-Off switchers required but 275,000 lbs. There is a saving of 41,000 lbs. or 20.5 tons of coal per month for each Limited Cut-Off locomotive placed in service.

The Limited Cut-Off makes possible the use of the expansive power of steam. For economy, without additional maintenance, include this important element that increases operating efficiency.



THE FRANKLIN SLEEVE JOINT
Uses flat gaskets—the cheapest to buy when replacement is necessary.

FRANKLIN RAILWAY SUPPLY CO., INC.

NEW YORK CHICAGO SAN FRANCISCO ST. LOUIS MONTREAL

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
New York Connecting	Mar.	20	$183,041	$.....	$206,257	$12,973	$9,579	$...	$39,026	$949	$62,527	30.3	$143,730	$106,580	$76,159	$95,364
	3 mos.	20	529,569	.....	581,438	40,959	16,497	....	109,864	2,894	170,214	29.3	411,224	300,174	209,986	292,135
New York, Ontario & Western	Mar.	568	711,279	27,720	872,538	76,443	160,785	14,332	358,665	27,099	639,273	73.3	233,265	190,607	116,010	—25,501
	3 mos.	568	2,016,525	95,913	2,499,243	218,681	460,679	43,397	1,101,019	82,911	1,920,452	76.8	578,791	451,137	280,313	15,534
Norfolk & Western	Mar.	2,235	6,171,245	211,991	6,655,232	827,108	1,376,200	122,512	1,804,725	251,984	4,391,676	66.0	2,263,556	1,588,348	1,696,004	2,200,735
	3 mos.	2,235	18,136,529	691,716	19,549,988	2,392,136	4,075,557	363,649	5,372,528	764,182	13,007,752	66.5	6,542,236	4,366,000	4,762,312	7,948,889
Norfolk Southern	Mar.	932	484,536	13,464	526,248	81,631	89,895	26,778	217,270	25,292	440,866	83.8	85,382	36,297	22,496	83,083
	3 mos.	932	1,285,384	41,128	1,411,700	220,258	249,091	77,796	624,269	75,381	1,246,401	88.3	165,299	18,950	—18,440	119,409
Northern Pacific	Mar.	6,789	4,485,458	409,033	5,390,244	783,097	1,294,429	199,811	2,022,594	269,425	4,638,506	86.1	751,738	98,070	467,806	758,185
	3 mos.	6,789	11,978,977	1,277,487	14,701,691	1,798,417	3,812,884	592,731	6,046,905	800,473	13,273,694	90.3	1,427,997	—530,545	406,203	1,126,856
Northwestern Pacific	Mar.	441	168,914	105,390	308,466	96,027	75,110	5,709	179,628	16,663	372,628	120.8	—64,162	—99,603	—109,855	—73,821
	3 mos.	441	470,907	296,317	866,136	227,928	220,259	16,246	520,682	55,302	1,089,403	125.8	—223,267	—331,158	—356,314	—254,386
Oklahoma City-Ada-Atoka	Mar.	132	50,980	1,400	54,384	15,048	3,610	1,171	18,001	2,938	40,633	74.7	13,751	8,737	—1,755	—6,099
	3 mos.	132	142,055	4,849	154,849	41,254	9,438	3,706	51,139	9,618	114,880	74.2	—39,969	25,141	—62,266	—17,678
Pennsylvania Railroad	Mar.	10,891	28,701,076	7,592,255	40,236,529	5,113,478	7,716,586	762,581	15,736,580	1,625,008	32,537,310	80.9	7,699,219	4,807,310	3,818,561	7,311,801
	3 mos.	10,891	80,778,117	23,277,370	115,082,905	14,976,747	25,058,537	2,405,924	46,466,382	4,813,203	95,402,047	82.9	19,680,858	12,518,594	9,309,004	19,935,036
Long Island	Mar.	404	899,163	1,801,248	2,841,915	290,435	485,948	18,471	1,241,491	61,600	2,097,929	73.8	743,986	600,769	449,501	342,492
	3 mos.	404	2,383,886	5,356,820	8,166,505	905,277	1,394,299	50,997	3,606,289	185,731	6,142,521	75.2	2,023,984	1,637,849	1,163,644	985,338
Peoria & Pekin Union	Mar.	17	8,023	555	89,497	8,509	11,407	4,923	55,358	7,724	87,921	98.2	1,576	—15,424	17,319	40,624
	3 mos.	17	24,428	1,594	315,726	22,430	31,345	15,221	156,351	23,649	248,996	78.9	66,730	15,230	100,595	101,095
Pere Marquette	Mar.	2,265	2,226,870	120,308	2,468,750	374,804	472,735	68,641	992,376	98,436	2,015,696	81.7	453,054	338,871	244,313	442,259
	3 mos.	2,265	6,123,664	383,105	6,878,310	1,121,110	1,433,008	204,002	2,900,056	308,421	5,990,602	87.1	887,708	441,008	231,748	963,769
Pittsburgh & Shawmut	Mar.	102	73,752	1,796	76,236	13,965	23,967	1,850	21,108	4,061	64,951	85.2	11,285	10,198	10,150	29,822
	3 mos.	102	215,615	5,313	223,571	38,422	69,299	4,974	65,350	12,111	190,156	85.0	33,415	30,160	28,922	83,925
Pittsburgh & West Virginia	Mar.	92	244,206	2,229	274,336	19,454	67,248	19,802	53,866	19,016	188,795	68.8	85,541	55,790	82,922	76,005
	3 mos.	92	677,573	6,742	767,376	82,848	199,174	57,088	157,479	59,627	583,924	76.0	183,452	121,036	204,446	316,845
Pittsburgh, Shawmut & Northern	Mar.	198	108,795	371	111,996	13,051	19,892	1,643	37,087	6,878	78,557	70.1	33,439	30,661	29,629	27,611
	3 mos.	198	314,086	1,238	323,163	40,972	60,554	4,448	113,503	20,441	239,918	74.2	83,245	74,898	67,912	86,151
Quincy, Omaha & Kansas City	Mar.	249	24,853	4,191	34,594	10,838	3,770	897	19,748	2,236	37,404	108.1	2,810	—7,563	—9,688	—487
	3 mos.	249	78,334	10,062	103,190	35,,117	18,001	3,001	61,593	6,992	124,504	120.7	—21,314	—35,575	—42,821	—17,809
Reading	Mar.	1,454	5,765,677	408,111	6,594,595	1,029,697	1,682,877	98,772	2,608,979	223,435	5,735,170	87.0	859,425	623,961	585,130	914,513
	3 mos.	1,454	16,749,659	1,267,161	19,221,035	2,824,290	5,058,804	271,867	7,865,762	683,401	16,769,288	87.2	2,451,747	1,767,346	1,676,906	2,831,839
Atlantic City	Mar.	163	103,893	53,183	170,020	69,816	18,521	4,040	151,789	4,593	248,895	146.4	—78,875	—120,475	—126,997	—129,950
	3 mos.	163	292,948	144,046	470,009	170,918	57,374	9,882	444,252	13,155	696,364	148.2	—226,355	—351,155	—378,976	—363,837
Richmond, Fredericksburg & Potomac	Mar.	117	472,154	315,019	998,497	56,651	162,791	8,607	323,431	34,964	613,215	61.4	385,282	321,629	246,308	230,033
	3 mos.	117	1,288,646	895,299	2,681,818	174,375	453,485	26,758	930,344	106,027	1,756,672	65.6	925,146	759,993	553,127	581,175
Rutland	Mar.	413	221,097	59,225	368,212	78,368	81,481	11,380	164,775	17,050	354,794	96.4	13,418	—7,437	—2,143	41,823
	3 mos.	413	622,224	196,880	1,074.948	226,527	233,601	33,072	499,429	49,888	1,047,433	97.4	27,515	—35,157	—20,348	86,180
St. Louis-San Francisco	Mar.	5,266	3,876,413	449,114	4,742,314	524,978	855,948	120,174	1,784,340	204,419	3,523,619	74.3	1,218,695	925,526	878,129	1,318,049
	3 mos.	5,266	11,221,013	1,447,120	13,884,999	1,488,451	2,597,294	360,726	5,183,583	617,594	10,342,016	74.5	3,542,983	2,533,602	2,377,296	3,970,097
Ft. Worth & Rio Grande	Mar.	233	31,030	4,532	44,416	20,441	13,676	3,028	33,267	3,791	74,199	167.1	—29,783	—34,259	—42,965	—32,269
	3 mos.	233	102,020	10,914	134,533	56,176	37,822	8,932	99,616	11,897	214,187	159.2	—79,654	—93,879	—118,268	—76,595
St. Louis, San Francisco & Texas	Mar.	262	81,545	6,689	92,094	23,091	18,678	5,886	51,291	7,835	106,781	116.0	—14,687	—19,012	—50,096	—13,867
	3 mos.	262	272,295	19,818	304,796	69,557	54,981	18,072	151,386	24,049	318,008	104.3	—13,212	—25,913	—117,493	—41,355
St. Louis Southwestern Lines	Mar.	1,913	1,463,729	44,595	1,613,090	243,163	260,627	103,611	573,387	83,801	1,273,748	79.0	339,342	262,630	105,646	412,198
	3 mos.	1,913	3,958,390	131,581	4,381,009	664,641	761,403	318,034	1,661,691	253,300	3,671,812	83.8	709,197	450,752	42,259	563,966
San Diego & Arizona	Mar.	155	50,386	22,480	77,090	14,304	15,095	3,538	22,567	7,243	63,978	83.0	13,112	7,532	9,626	21,113
	3 mos.	155	152,244	64,409	223,668	40,238	44,645	10,549	68,737	21,922	189,536	84.7	34,132	17,386	23,269	71,699
Seaboard Air Line	Mar.	4,481	3,493,556	528,603	4,496,992	586,387	780,247	187,196	1,565,926	183,122	3,373,783	75.0	1,123,209	782,823	628,528	726,370
	3 mos.	4,481	9,639,403	1,735,224	12,606,185	1,825,660	2,214,816	561,566	4,517,773	523,051	9,851,071	78.1	2,755,108	1,731,684	1,279,630	2,361,233
Southern Ry.	Mar.	6,730	7,175,033	1,072,591	8,948,756	1,356,684	1,838,295	233,980	3,404,788	348,359	7,247,438	81.0	1,701,318	1,020,176	802,850	1,394,347
	3 mos.	6,730	19,896,188	3,348,002	25,252,732	3,992,640	5,395,867	688,169	9,846,689	1,025,046	21,143,432	83.7	4,109,300	2,132,126	1,565,580	3,735,790
Alabama Great Southern	Mar.	315	454,926	65,104	560,673	117,788	126,830	16,051	200,975	23,273	489,605	87.3	71,068	27,631	44,314	171,908
	3 mos.	316	1,252,005	203,075	1,573,471	332,512	386,943	51,992	595,659	66,726	1,448,497	92.1	124,974	—4,258	32,936	308,990
Cinn., New Orleans & Tex. Pac.	Mar.	338	1,046,293	135,519	1,262,599	240,520	316,823	35,692	427,840	54,584	1,082,533	85.7	180,066	110,477	107,538	384,935
	3 mos.	338	3,138,468	461,485	3,832,702	701,503	967,484	109,221	1,301,306	160,729	3,269,612	85.3	563,090	340,158	347,228	979,681

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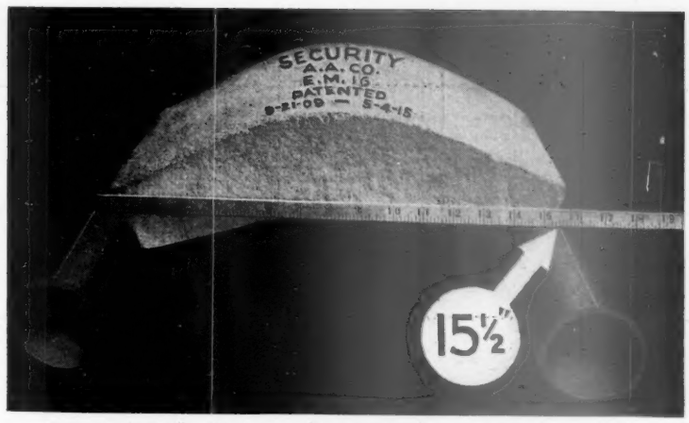
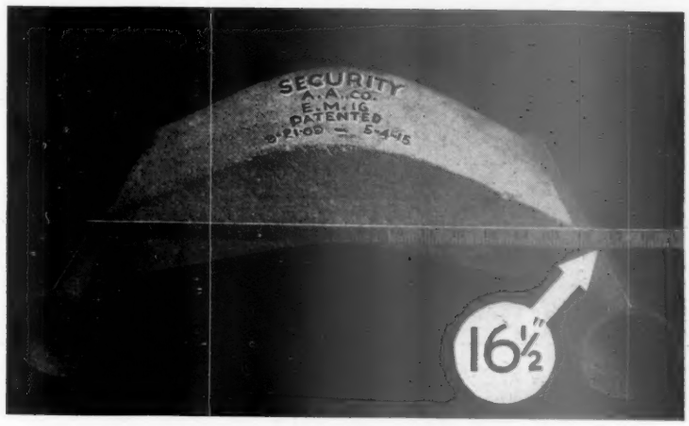
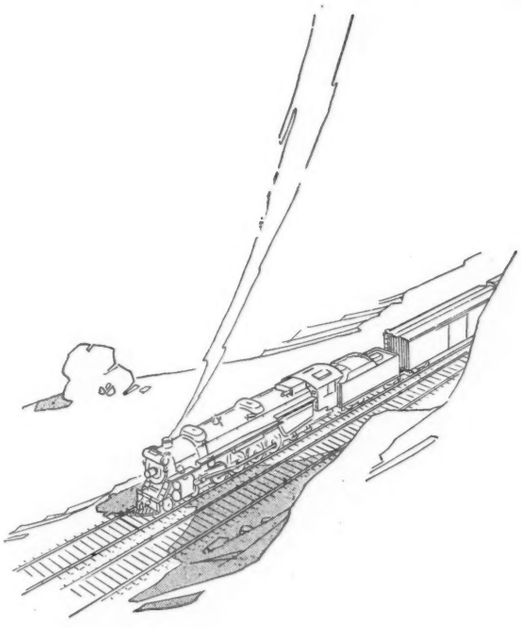




This American Arch Company Development *Simplified* BRICK STOCKS



WITH THE old style double socket center brick, a slight variation in Arch tube spacing called for a different Arch brick. Sizes were numerous and excessive brick stocks were therefore necessary.

American Arch Company then developed the "Bevelled End" Arch Brick that permits of a variation of a whole inch in Arch tube spacing without changing brick size. The separate sizes of center brick needed were thereby reduced to one-third the number formerly stocked.

This standardization is only one of the many benefits derived by the railroads from the specialization of the American Arch Company on locomotive Arches.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.
Refractory Specialists

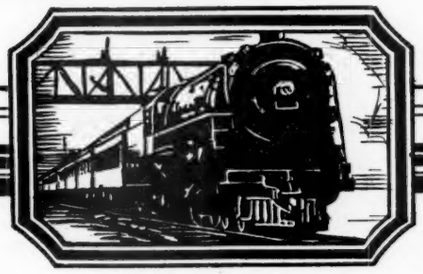
AMERICAN ARCH CO.
INCORPORATED
Locomotive Combustion Specialists » » »

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1931—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equip. ment.	Traffic.	Trans-portation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1930.
Georgia Southern & Florida	Mar.	397	$200,765	$69,804	$297,264	$58,918	$62,962	$2,636	$109,281	$2,493	$243,189	81.8	$54,075	$34,545	$29,073	$43,527
	3 mos.	397	550,695	221,172	844,532	167,927	182,551	5,967	313,233	8,240	689,580	82.7	145,952	91,423	90,166	160,581
New Orleans & Northwestern	Mar.	204	236,719	33,139	294,431	53,165	67,931	9,471	111,134	15,055	259,402	88.1	35,029	—5,554	—34,281	23,591
	3 mos.	204	652,020	104,554	817,171	153,885	195,566	31,096	323,728	41,653	754,282	92.3	62,889	—58,890	—133,658	41,371
Northern Alabama	Mar.	110	56,449	2,521	61,215	22,528	2,405	1,632	22,743	3,240	52,548	85.8	8,667	3,138	—12,125	7,492
	3 mos.	110	163,797	7,252	177,526	61,350	7,805	5,196	71,536	8,833	154,720	87.2	22,806	6,216	—31,613	21,403
Southern Pacific	Mar.	9,127	9,249,390	2,122,060	12,519,058	1,647,334	2,435,893	358,219	4,552,649	632,449	9,845,502	78.6	2,673,556	1,439,071	1,068,207	2,338,722
	3 mos.	9,127	25,839,739	7,197,165	36,285,289	5,001,104	7,360,589	1,045,632	13,463,476	1,880,714	29,470,959	81.2	6,814,330	3,199,256	2,348,496	6,149,817
So. Pacific Steamship Lines	Mar.	....	480,275	37,859	560,005	27,541	149,318	19,998	410,866	33,641	641,358	114.5	—81,353	—82,574	—82,705	—51,620
	3 mos.	....	1,326,524	105,182	1,537,488	64,888	448,208	61,367	1,183,758	97,992	1,856,213	120.7	—318,725	—322,388	—322,783	—200,563
Texas & New Orleans	Mar.	4,700	3,046,952	483,022	3,909,118	610,003	840,746	168,369	1,510,824	234,205	3,373,345	86.3	535,773	426,561	192,171	477,229
	3 mos.	4,700	8,934,407	1,589,636	11,718,191	1,980,589	2,565,577	494,296	4,446,680	720,902	10,254,290	87.5	1,463,901	779,145	102,547	1,175,362
Spokane, Portland & Seattle	Mar.	555	400,306	52,258	495,323	61,691	80,706	11,176	171,344	21,758	348,678	70.4	146,645	60,721	56,572	131,571
	3 mos.	555	1,134,657	138,582	1,398,991	161,908	245,335	33,517	507,271	67,881	1,022,246	73.1	376,745	118,798	93,240	232,973
Tennessee Central	Mar.	295	212,517	8,354	233,074	44,933	43,083	9,303	86,085	14,050	197,046	84.5	36,028	30,563	12,693	—2,016
	3 mos.	295	625,146	25,190	685,038	146,728	121,160	27,154	255,438	42,466	591,987	86.4	93,051	75,841	27,585	7,946
Terminal R. R. Assn. of St. L.	Mar.	55	.....	.....	739,368	121,280	71,864	3,892	353,385	23,270	576,747	78.0	162,621	67,194	150,298	205,411
	3 mos.	55	.....	.....	2,097,831	331,920	217,988	10,613	1,051,473	72,109	1,672,910	79.7	424,921	138,642	381,286	618,328
Texas & Pacific	Mar.	1,955	2,166,272	299,849	2,693,415	342,162	397,482	81,457	876,738	115,025	1,827,135	67.8	866,280	720,063	563,339	761,860
	3 mos.	1,955	6,039,260	860,536	7,531,308	948,131	1,263,262	245,410	2,519,455	344,833	5,360,095	71.2	2,171,213	1,793,835	1,216,955	1,497,828
Texas Mexican	Mar.	162	85,363	1,711	106,265	20,315	18,265	3,131	40,278	7,525	88,436	83.2	17,829	12,829	8,183	6,300
	3 mos.	162	193,006	5,141	247,966	50,601	47,645	10,057	119,061	23,089	249,239	100.5	—1,273	—16,319	—32,195	—14,841
Toledo, Peoria & Western	Mar.	239	129,832	231	133,129	26,218	12,038	13,944	47,348	8,156	107,704	80.9	25,425	21,312	15,122	24,655
	3 mos.	239	379,264	367	388,093	61,663	37,227	42,816	142,973	27,317	311,996	80.4	76,097	62,551	45,347	20,588
Toledo Terminal	Mar.	28	.....	.....	108,929	15,636	14,234	552	43,482	4,768	78,672	72.2	30,257	16,069	43,738	36,493
	3 mos.	28	.....	.....	288,673	26,907	40,934	1,701	119,946	14,667	204,153	70.7	84,520	41,999	117,235	124,129
Ulster & Delaware	Mar.	128	26,479	1,663	69,308	12,869	13,071	1,052	33,710	3,806	64,508	93.1	4,800	500	—1,329	—8,244
	3 mos.	128	62,557	5,408	176,224	37,248	34,408	3,396	99,050	11,580	185,682	105.4	—9,458	—21,258	—24,898	—35,844
Union R. R. of Penn.	Mar.	45	.....	.....	441,673	94,503	133,491	146	246,139	14,130	488,379	110.6	—46,706	—56,506	—6,043	90,185
	3 mos.	45	.....	.....	1,262,926	263,665	449,498	447	726,376	43,448	1,483,339	117.5	—220,473	—249,873	—86,473	286,218
Union Pacific	Mar.	3,765	6,021,141	767,148	7,509,115	898,871	1,689,172	167,946	2,241,747	339,380	5,453,867	72.6	2,055,248	1,414,171	1,142,795	1,108,604
	3 mos.	3,765	16,973,405	2,178,839	21,084,671	1,972,540	4,979,134	458,002	6,543,543	1,006,336	15,312,059	72.6	5,772,612	3,849,296	3,220,388	3,468,254
Oregon Short Line	Mar.	2,531	2,140,819	168,000	2,469,861	319,307	415,378	53,420	726,496	125,669	1,691,133	68.5	778,728	490,277	381,905	397,811
	3 mos.	2,531	5,925,557	535,437	6,981,605	802,930	1,204,994	152,633	2,236,848	378,084	4,939,888	70.8	2,041,717	1,176,086	887,820	1,286,078
Oregon-Wash. R. R. & Nav. Co.	Mar.	2,337	1,329,933	131,764	1,638,747	316,847	252,328	66,670	665,219	121,871	1,443,766	88.1	194,981	11,592	—115,760	—11,198
	3 mos.	2,337	3,785,119	404,453	4,691,409	832,836	782,137	206,594	2,046,881	370,140	4,305,252	91.8	386,157	—163,987	—504,286	—30,583
Los Angeles & Salt Lake	Mar.	1,250	1,308,461	214,854	1,665,615	318,130	289,706	74,953	553,032	86,553	1,381,208	82.9	284,407	146,770	5,587	132,354
	3 mos.	1,241	3,747,907	629,980	4,791,821	931,628	886,887	206,059	1,640,557	252,482	4,065,899	84.9	725,922	291,443	—103,726	430,356
St. Joseph & Grand Island	Mar.	258	272,302	5,175	285,943	42,764	35,605	3,215	89,842	17,245	188,738	66.0	97,205	78,433	51,245	46,107
	3 mos.	258	757,568	13,513	796,100	97,957	100,922	10,319	257,818	51,394	519,247	65.2	276,853	221,332	154,706	184,034
Utah	Mar.	111	99,249	.....	99,404	13,142	29,505	368	23,382	5,400	71,276	71.7	28,128	19,536	9,653	—1,687
	3 mos.	111	404,224	36	407,262	48,986	106,708	1,091	94,618	16,698	267,145	65.6	140,117	105,647	69,112	88,182
Virginian	Mar.	562	1,208,406	15,933	1,306,772	151,964	280,167	17,169	302,063	31,509	784,009	60.0	522,763	377,738	442,919	467,114
	3 mos.	562	3,682,074	47,493	3,977,153	405,995	802,701	43,690	882,124	96,113	2,236,052	56.2	1,741,101	1,276,048	1,481,132	2,010,672
Wabash	Mar.	2,523	3,813,580	336,997	4,436,042	363,624	780,971	185,217	2,049,166	239,036	3,638,099	82.0	797,943	575,974	216,627	680,194
	3 mos.	2,523	10,501,572	1,028,877	12,412,556	898,611	2,130,086	547,507	5,843,897	671,501	10,153,085	81.8	2,259,471	1,731,275	607,779	1,616,313
Ann Arbor	Mar.	293	380,370	4,958	394,731	29,529	73,970	14,871	171,878	17,296	307,556	77.9	87,175	63,794	41,464	46,620
	3 mos.	293	1,020,862	17,629	1,065,223	78,401	196,926	42,365	497,584	52,735	867,947	81.5	197,276	127,203	50,337	106,235
Western Maryland	Mar.	896	1,304,358	9,217	1,365,212	197,377	260,961	44,035	364,743	45,874	919,073	67.3	446,139	371,139	377,380	470,326
	3 mos.	896	3,759,778	29,129	3,935,940	540,291	660,173	133,448	1,084,686	122,426	2,551,075	64.8	1,384,865	1,159,865	1,170,848	1,390,287
Western Pacific	Mar.	1,051	787,111	59,061	1,020,421	184,985	228,785	63,718	479,132	48,175	1,033,110	101.2	—12,689	—107,185	—83,918	—55,816
	3 mos.	1,051	2,455,407	144,745	2,782,041	427,452	649,479	195,420	1,351,899	146,444	2,804,604	100.8	—22,563	—306,250	—236,399	—214,719
Wheeling & Lake Erie	Mar	511	991,394	10,004	105,434	101,557	307,964	34,504	335,756	39,569	820,338	78.0	231,096	125,597	127,759	278,315
	3 mos.	511	2,680,486	34,520	2,865,537	264,068	843,768	102,999	982,640	120,185	2,316,993	80.9	548,544	245,728	226,934	708,941
Wichita Falls & Southern	Mar.	203	46,208	102	47,629	11,347	8,639	2,376	18,626	4,086	44,674	93.80	2,955	—1,527	—5,900	17,128
	3 mos.	203	141,021	391	146,498	30,794	26,008	7,631	58,366	12,305	133,705	91.28	12,793	—1,021	—13,767	19,862

News Department Continued on Next Left Hand Page



Alco Alco

To Economize — Modernize The Profits Now Lost Would Pay The Cost

"Comparing the relative improvements in operating costs effected during the two periods, 1920-1925, and 1925 to 1929, a marked slowing up in the rate at which some of these reductions in expenses are taking place is quite evident. This, in a general way, supports the belief that the major opportunities for improvements in operating and maintenance practices are gradually being exhausted. To the extent that this is true it then becomes evident that more dependence will have to be placed in the contributions of modern locomotives in the future in order that reductions in the direct costs of operation may continue to be made without interruption."

With 80 per cent of the locomotives over 10 years old, it would seem that the doorway leading to future reductions in costs of operation is wide open.

Quoted from Railway Age
January 3, 1931

American Locomotive Company
30 Church Street New York N.Y.

Alco Alco

News

(Continued from page 927)

ways and their suppliers, and the new purchasing power brought into being by the development of, for instance, the motor industry.

"The Co-ordination Committee is convinced that this question of new transport developments will be one of the most important tasks before the International Chamber during the coming two years. It is absolutely essential that the Committee of Experts should start work as soon as possible. The resolution and reports presented to the Standing Committee on Rail Transport and the Highway Transport Committee together with their conclusions are intended merely to guide them in their work and not to anticipate their decisions. The Committee points out that the inquiry is not an end in itself; it awaits from the experts a selection of data that will enable the Joint Conference to do useful work."

Capital Liabilities of C. N. R. over Two Billion

The capital debt of the Canadian National Railways on December 31, 1930, was $2,150,781,545. This was made up as follows: Funded debt held by public, $1,168,565,864; loans from Dominion of Canada, $604,406,239; interest on loans accrued but unpaid, $322,155,901; short term loans (public), $8,993,000; short terms loans (Minister of Finance), $46,660,541.

This information was given in the House of Commons at Ottawa in answer to a series of questions by Dr. Peter McGibbon, Conservative member for Muskoka (Ont.). Dr. McGibbon was told that the capital debt of the Government-owned system on December 31, 1922, was $1,379,186,475.

According to information tabled in the House in answer to questions by Dr. McGibbon, a total of $21,537,476 is invested in the nine hotels owned and operated by the Canadian National Railways. During the last calendar year four of the nine hotels had shown an operating profit, and the statement shows that when the interest on investment is considered none of the hotels show a profit. The total investment in the Chateau Laurier at Ottawa is given as $8,535,863, the interest on the investment is $419,274 and the deficit after charges last year was $363,665, though there was an operating profit of $55,608. Invested in the Fort Gary Hotel in Winnipeg is $2,890,206; MacDonald, at Edmonton, $2,224,851; Nova Scotian, at Halifax, $2,358,418; Jasper Park Lodge, $2,539,153; Prince Arthur, at Port Arthur, $1,176,921; Prince Edward, at Brandon, $519,812; Minaki Lodge, $1,091,354.

THE COAL MERCHANTS' EDUCATION BUREAU, at a meeting in St. Louis, Mo., on April 21, authorized a study of the cost of trucking coal into the St. Louis territory so that a comparison can be made with the cost of shipping by railroad. It is estimated that approximately 600,000 tons of coal were carried into St. Louis by trucks during 1930.

Equipment and Supplies

LOCOMOTIVES

THE CENTRAL OF NEW JERSEY is inquiring for five locomotive tenders with a capacity of 21,000 gal. of water and 24 tons of coal; the tenders will be equipped with six-wheel trucks.

FREIGHT CARS

THE UNION PACIFIC has ordered six air dump cars of 30 cu. yd. capacity from the Differential Steel Car Company.

THE UNITED VERDE COPPER COMPANY has ordered four air dump cars from the Western Wheeled Scraper Company.

THE CUDAHY PACKING COMPANY has ordered 25 sets of steel underframe parts for refrigerator cars from the Pullman Car & Manufacturing Corporation.

THE BOARD OF TRANSPORTATION, CITY OF NEW YORK, has given a contract to the Magor Car Corporation for furnishing and delivering 16 service cars. The contract includes six trailer flat cars, six air dump cars, two motor flat cars, one trailer supply car and one emergency pump car. Inquiry for this equipment was reported in the *Railway Age* of December 20, 1930.

PASSENGER CARS

THE BOARD OF TRANSPORTATION, CITY OF NEW YORK, is now preparing a contract to be awarded in July of this year for 300 or more steel passenger cars for subway service. A total of about 1,800 passenger cars will be built. A contract for building a previous order of 300 cars for subway service was let to the American Car & Foundry Company, as reported in the *Railway Age* of September 7, 1929.

IRON & STEEL

THE WABASH is inquiring for 800 tons of structural steel for grade separation work in Michigan.

THE COLUMBUS & GREENVILLE is inquiring for 650 tons of structural steel for bridge work in Mississippi.

THE ERIE has ordered 160 tons of steel for a bridge at Starin avenue, Buffalo, N. Y., from the American Car & Foundry Company.

THE DELAWARE & HUDSON has received bids on 365 tons of steel for grade crossing elimination work at Cobleskill, N. Y.

THE BALTIMORE & OHIO has ordered 325 tons of steel for a bridge at Clifton, Staten Island, N. Y., from the Jones & Laughlin Steel Corporation.

THE BALTIMORE & OHIO has ordered 100 tons of structural steel for a warehouse at Cleveland, Ohio, from the Ingalls Iron Works.

THE READING has received bids on 250 tons of steel for work at Noble, Pa. An order for 335 tons has been given to the McClintic-Marshall Company for a bridge at Nicholas, Pa.

THE BOARD OF TRANSPORTATION, CITY OF NEW YORK, has given a contract to the Bethlehem Steel Company for furnishing 6,100 net tons of 150-lb. contact rail for use in the subways.

THE MISSOURI PACIFIC has ordered 15,000 tons of rails, dividing the order equally among the Colorado Fuel & Iron Company, the Tennessee Coal, Iron & Railroad Company, the Illinois Steel Company and the Inland Steel Company.

THE SEABOARD AIR LINE has ordered 4,000 tons of new 100-lb. R.E. rail from the Tennessee Coal, Iron & Railroad Company and 1,000 tons of the same section from the Bethlehem Steel Company. This order of 5,000 tons is in addition to a previous order for 5,000 reported in the *Railway Age* of February 21.

MOTOR COACHES

THE BOSTON & MAINE has received four Type Y, 29-passenger parlor motor coaches from the General Motors Truck Company, Pontiac, Mich.

THE PACIFIC GREYHOUND LINES have ordered six 53-passenger Duplex type motor coaches from the Pickwick Motor Coach Works, Inglewood, Cal., and six motor coaches of 45-passenger capacity and six of 40-passenger capacity from the General Motors Truck Company, Pontiac, Mich. Six type 250, 33-passenger observation Yellow coaches have been delivered to the Pacific Greyhound Lines by the General Motors Truck Company.

SIGNALING

THE PITTSBURGH & LAKE ERIE has ordered from the Union Switch & Signal Company material for an electric interlocking at Connellsville, Pa. The machine will have five levers and searchlight signals will be used. The electric switch movements will have dual control. This plant is at the connection with the Pittsburgh & West Virginia.

MISCELLANEOUS

THE UNION PACIFIC has ordered a ballast spreader from the Rodger Ballast Car Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered two ballast spreaders from the Rodger Ballast Car Company.

THE GOVERNOR OF MISSOURI has signed the bill recently passed by the state legislature fixing the dimensions of motor vehicles operated over the state highways. The maximum dimensions of motor buses and trucks have been fixed as follows: Width, 96 in.; height, 12½ ft., including load; length of single vehicles, 33 ft., and length of any combination of vehicles, 40 ft.

Continued on Next Left Hand Page

GEO

an important contribution to

TRANSPORTATION TECHNIQUE

SMOOTH RIDING, with its guarantee of greater passenger comfort and satisfaction should be reason enough to dictate the selection of G E O—the modern track construction. Yet this is only one of its many advantages. Practically noiseless track, control of rail movement, reduction in rail wave motion, longer life of rails and ties, radically reduced maintenance costs, greater speed, heavier loads, greater safety . . these are other advantages which account for the immediate acceptance of G E O in many European countries. In Germany alone, where G E O was introduced five years ago, more than 7900 miles of G E O track have already been laid and new construction is going on at the rate of 1800 miles per year! Here in America, test sections on leading railroad systems are demonstrating its exceptional merit.

G E O is the outstanding contribution to transportation technique in the past decade. Descriptive literature will be sent at your request, and Carnegie Engineers are at your service at all times.

GEO

CARNEGIE STEEL COMPANY - PITTSBURGH

Subsidiary of United States Steel Corporation

135

TRACK CONSTRUCTION

Supply Trade

A. W. Carlisle, treasurer of the **Illinois Steel Company,** retired on May 1.

The Royal Railway Supply Company, Inc., has moved its office from 90 West street to 250 Park avenue, New York City.

W. J. Totten, district manager of sales of the **United States Steel Corporation** subsidiaries, with headquarters at St. Paul, Minn., retired on April 21.

William H. Eaton, district manager of sales of the **American Sheet & Tin Plate Company,** Pittsburgh, Pa., with headquarters at Chicago, retired on May 1.

J. H. Morris, assistant secretary and assistant treasurer of the **Inland Steel Company,** has been promoted to secretary. **W. D. Truesdale,** secretary and treasurer, will continue as treasurer.

The Pyle-National Company's office now located in Washington, D. C., will be transferred to the Baltimore Trust building, Baltimore, Md., after June 1. **J. L. Reese** will be in charge.

J. L. Vauclain, vice-president and manager of the **Baldwin Locomotive Works,** Eddystone, Pa., has resigned on account of ill health. He is a son of Samuel M. Vauclain, chairman of the board of directors.

William Thompson, assistant to the president of the **American Steel & Wire Company,** Cleveland, Ohio, retired on May 1. **George F. Rummel,** for the past two years assigned to special work and during the previous 26 years assistant general manager of sales, also retired on May 1.

The Grindle Fuel Equipment Company, Harvey, Ill., a subsidiary of the Whiting Corporation, has purchased the exclusive manufacturing and selling rights to the Bethlehem pulverizer formerly manufactured by the Bethlehem Steel Company.

Garret A. Connors has been appointed vice-president and director of purchases of the **Truscon Steel Company,** with headquarters at Youngstown, Ohio. Mr. Connors has been for 24 years in the service as an executive in the production division of the same company.

M. B. MacNeille, manager of the pump division of **Fairbanks, Morse & Company,** has resigned after 19 years connection with that company, to join the sales organization of the **Dayton-Dowd Company,** Quincy, Ill. Mr. MacNeille will act as western sales manager with headquarters at San Francisco, Cal.

William L. Hartley has been appointed district sales manager with headquarters at 5938 Linsdale avenue, Detroit, Mich., in charge of Detroit territory for the **Link-Belt Company,** Chicago. Mr. Hartley has been in the employ of the Link-Belt Company since 1915 having begun work in the engineering department. From 1917 to 1919 he was with the United States Expeditionary Forces in France, rejoining the Link-Belt Company after his return from service. Since 1928 he has been in charge of the foundry sales division of the company.

Manning, Maxwell & Moore, Inc, New York has discontinued the direct sale of Putnam machine tools and Shaw overhead electric traveling cranes in the Chicago territory. Its Chicago sales branch was closed on May 1 and the **Dean Machinery Company** has been appointed to represent Manning, Maxwell & Moore, Inc., in the sale of Putnam machine tools and Shaw cranes in the Chicago territory. R. S. Dean, president of Dean Machinery Company has been connected with Manning, Maxwell & Moore, Inc., for 22 years. For the past few years Mr. Dean has been manager of the Chicago branch of Manning, Maxwell & Moore, Inc., selling Putnam machine tools and Shaw cranes. The new address of the Dean Machinery Company offices is 80 East Jackson boulevard, Chicago, with warehouse at 2601 Cottage Grove avenue. The Chicago office of the Consolidated Ashcroft Hancock Company, Inc., a subsidiary of Manning, Maxwell & Moore, Inc., will continue to operate without change.

Hugh E. Hale, vice-chairman of the Eastern Group, Presidents' Conference Committee on Federal Valuation of Railroads with office at New York, has established offices under the name of **H. E. Hale & Company,** 32 Nassau street, New York, for the general practice of engineering, specializing in railroad and utility valuations, financial analyses and reports. The Eastern Group office of the Presidents' Conference Committee at the same address,

Hugh E. Hale

New York, will be closed on June 30. Mr. Hale was born on April 8, 1874, at Minomen, Minn., and was graduated from Lehigh University as a civil engigeer in 1897. He previously served in 1896 as an assistant engineer on the Pennsylvania at Philadelphia, Pa. From 1898 to 1899, he was assistant engineer at Altoona; then assistant supervisor of signals at Jersey City, N. J., and from 1901 to 1902 was supervisor of signals at Camden on the same road. From 1902 to 1903 he was division engineer on the Baltimore & Ohio, at Philadelphia; then superintendent until 1905 at Butler and later engineer maintenance of way of the same road, at Baltimore, Md. Mr. Hale in 1908 entered the service of the Missouri Pacific as engineer of design at St. Louis, Mo., and in 1910 was appointed principal assistant engineer of the same road at that place. From 1911 to 1914 he served as engineer maintenance of way on the same road at Little Rock, Ark. In March, 1914, he was appointed engineer, Eastern Group, Presidents' Conference Committee on Federal Valuation of Railroads, with headquarters at New York, and since 1926 has served as vice-chairman of the same organization.

OBITUARY

Edward Scheffel, sales representative, eastern district, of the American Locomotive Company, died on May 3, at Brooklyn, N. Y.

Wilson E. Symons, consulting engineer died on May 1 at the Elks Club, New York City, where he had resided for some time. Mr. Symons was born on December 18, 1858, at Farmland, Ind., and was educated at Dublin Academy in eastern Indiana. He began railway work in 1880 as a machinist at the Chicago shops of the Chicago, Rock Island & Pacific. From 1881 to 1885 he was chief engineer in the merchant marine service on the Great Lakes and then to 1887 was consecutively locomotive fireman and engineman, and engaged in special engineering work on the Wisconsin Central. He subsequently served as locomotive engineman on the Atlantic & Pacific, now part of the Atchison, Topeka & Santa Fe and in special engineering work in California and Arizona until 1889 when he went to the Electric Engineering Works, Chicago. The following year he was appointed general foreman of the Atchison, Topeka & Santa Fe, at Chanute, Kan., subsequently serving as master mechanic on the same road first at Arkansas City, Kan., then at Raton, New Mex., and later on the Mexican Central, at San Luis Potosi, Mex. From 1896 to 1898 he was mechanical expert and salesman of the Galina Oil Company, in the United States, England and France. He then was appointed superintendent of motive power and equipment at Savannah, Ga., on the Plant System, now a part of the Atlantic Coast Line, and from May, 1902, until August, 1904, was mechanical superintendent of the Gulf, Colorado & Santa Fe. From August, 1904, until the following June, he was with the Kansas City Southern as superintendent of machinery and later was engaged in special consulting work at

Continued on Next Left Hand Page

The Creaking Ox Cart

The plodding pace of primitive transportation sufficed for the unhurried ages now buried in the past; but the swift tempo of life today demands the speed that translates miles into minutes on Gary Wrought Steel Wheels.

U S STEEL

Illinois Steel Company

Subsidiary of United States Steel Corporation

General Offices: 208 South La Salle Street, Chicago

Chicago. In 1909 he was appointed superintendent of motive power and machinery of the Chicago Great Western, at St. Paul, Minn., returning to special railway consulting work in 1910 at Chicago. He served from December, 1912, for about eight months as superintendent of motive power of the San Antonio & Aransas Pass. From 1914 to 1919 Mr. Symons was a vice-president of the Wilson Welder & Metals Company, New York, and since that time had been engaged as an editorial writer and a consulting engineer, specializing in railway engineering work. At the time of his death, Mr. Symons was an active member of several engineering societies and clubs.

TRADE PUBLICATION

SIZES WE ROLL AND STANDARD EXTRAS.—This is the name of a vest pocket booklet of 48 pages issued by the Inland Steel Company, Chicago. For convenience, all standard extras and differentials applying to bars, plates, structurals, and rail steel products have been included as well as a complete list of sizes rolled.

Construction

ATCHISON, TOPEKA & SANTA FE.—A contract has been let to the Roberts & Schaefer Company, Chicago, for the construction of a 200-ton capacity reinforced concrete automatic electric locomotive coaling plant, a gravity sand plant with steam drying facilities, and an electric cinder handling plant at Boise City, Okla.

ATCHISON, TOPEKA & SANTA FE.—The California State Highway Commission has awarded a contract to M. B. McGowen, Sacramento, Cal., for the construction of a reinforced concrete and steel highway viaduct over the tracks of this company in Merced County, Cal. This railroad has awarded a contract to A. W. Smith & Son, Fort Madison, Iowa, for the construction of a two-story reinforced concrete and brick office building for mechanical forces at Shopton, Iowa. The structure will have outside dimensions of 60 ft. by 100 ft.

BOSTON & MAINE-CENTRAL VERMONT.—These two companies are preparing plans for the construction of a brick passenger station, and of a new baggage and express office building, to replace similar existing facilities at White River Junction, Vt.

DELAWARE & HUDSON.—The Public Service Commission of New York has approved specifications and cost estimates for the elimination of Potters crossing of this company's line in Unadilla, N. Y.

DELAWARE, LACKAWANNA & WESTERN.—This company has awarded to Parker & Graham, Inc., New York, contracts for the construction of overcrossings to eliminate grade crossings on the Whitney Point-Castle Creek county highway No. 1450-A (Adams street), 1.3 miles south of Whitney Point, N. Y., and on the Gulf Bridge county highway No. 274, Chenango Forks, N. Y. The two bridges involve the removal of 18 buildings, 71,000 cu. yd. of excavation, the use of 290,000 lb. of reinforcing steel and the placing of 2,800 cu. yd. of concrete.

KANSAS CITY SOUTHERN.—This company is expected to award contracts soon for the construction of a 1,060,000-bu. capacity reinforced concrete addition to its grain elevator, which is under lease to the Norris Grain Company, in the Northeast Industrial district at Kansas City, Mo.

LONG ISLAND.—The Transit Commission of New York City has approved a plan to elevate part of this company's Far Rockaway branch in the elimination of eight grade crossings, at an estimated total cost of $2,185,000. The crossings affected are at Far Rockaway and Ocean Crest boulevards, Gipson and McBride streets, and Cornaga, Grassmere, Mott and Nameoke avenues.

NEW YORK CENTRAL.—A contract has been awarded to the Walsh Construction Company, Syracuse, N. Y., for the elimination of a grade crossing at Junius, N. Y.

PENNSYLVANIA.—Contracts have recently been awarded as follows: To the Crossan Construction Company, Brownsville, Pa., for the construction of an undergrade bridge, to cost about $43,000, at Harrison avenue, Canton, Ohio; to the Belding Construction Company, Chicago, for the construction of a $52,000 subway at Patterson boulevard, Dayton, Ohio, and to the W. M. Brode Company, Newcomerstown, Ohio, for the elimination of a grade crossing on state highway (I.C.H.) No. 24, one and one-half miles south of Centerburg, Ohio, at a cost of approximately $68,000. Bids have been received for the elimination of a grade crossing, to cost about $100,000, at Crafton, Pa. The Public Service Commission of New York has approved as not excessive bids of $71,168 and $23,895, submitted respectively by G. D'Angelo Company, Binghamton, N. Y., and by I. M. Ludington's Sons, Inc., Rochester, N. Y., for the reconstruction of the bridge carrying the railroad over the Horseheads-Montour Falls state highway, Veteran, N. Y., and for various work in connection with grade separation structures near Pine Valley, N. Y.

RAILWAY EXPRESS AGENCY.—The general contract for remodeling the stables at Lebor, Jefferson and Clinton streets, Chicago, into a motor truck repair shop and office has been awarded to the Ford & Phillips Co., Chicago. The cost of this work is estimated at $400,000.

WABASH.—This company plans to ask for bids soon for the construction of the superstructure of its new double-track bridge over the Missouri river at St. Charles, Mo. The bridge will include a 600-ft. channel span, three 420-ft. spans and trestle approaches 2,100 ft. and 4,300 ft. long. The total cost of the project will approximate $3,250,000.

Financial

ATLANTA, BIRMINGHAM & COAST.—*Annual Report.*—The 1930 annual report of this company shows net deficit after interest and other charges of $598,544, as compared with a net deficit of $225,989 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
RAILWAY OPERATING REVENUES	$4,098,579	$4,719,692	—621,112
Maintenance of way	979,939	1,098,872	—118,932
Maintenance of equipment	918,149	1,017,887	— 99,738
Transportation	1,752,053	1,836,424	— 84,370
TOTAL OPERATING EXPENSES	4,354,937	4,644,372	—289,434
Operating ratio	106.25	98.40	+ 7.85
NET REVENUE FROM OPERATIONS	*256,358	75,319	—331,677
Railway tax accruals	190,559	183,863	+ 6,695
Railway operating income	*447,920	*109,680	—338,240
Hire of Equipment—Dr.	204,584	157,176	+ 47,407
Joint facility rents—Net	7,152	9,395	— 2,243
Non-operating income	73,079	63,632	+ 9,446
GROSS INCOME	*374,841	*46,047	—328,794
Rent for leased roads	.....	120	— 120
TOTAL DEDUCTIONS FROM GROSS INCOME	223,702	179,942	+ 43,760
NET INCOME	*598,544	*225,989	+372,554

ATLANTIC COAST LINE.—*Annual Report.*—The 1930 annual report of this company shows net income after interest and other charges, of $3,784,310, as compared with net income of $9,451,226 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
RAILWAY OPERATING REVENUES	63,019,956	72,371,894	—9,351,938
Maintenance of way	9,787,464	10,181,058	— 393,594
Maintenance of Equipment	12,513,107	13,874,060	—1,360,953
Transportation	22,643,244	24,667,139	—2,023,895
TOTAL OPERATING EXPENSES	49,685,460	53,431,588	—3,746,128
Operating ratio	78.84	73.83	+ 5.01
NET REVENUE FROM OPERATIONS	13,334,496	18,940,305	—5,605,809
Railway tax accruals	5,525,000	6,240,000	— 715,000
Railway operating income	7,779,646	12,654,512	—4,874,866
Joint facility rents	19,035	55,246	— 36,211
Non-operating income	4,548,310	4,815,704	267,394
GROSS INCOME	12,327,956	17,470,216	5,142,260
Rent for leased roads	82,576	82,576	.....
Interest on funded debt	*6,322,207	*6,322,207	.....
TOTAL DEDUCTIONS FROM GROSS INCOME	8,543,646	8,018,990	+ 524,656
NET INCOME	3,784,310	9,451,226	—5,666,916

* Does not include interest on Company's bonds held in the treasury or pledged.

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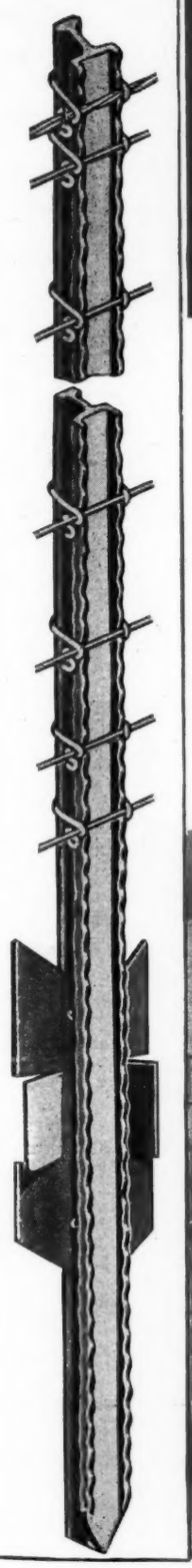
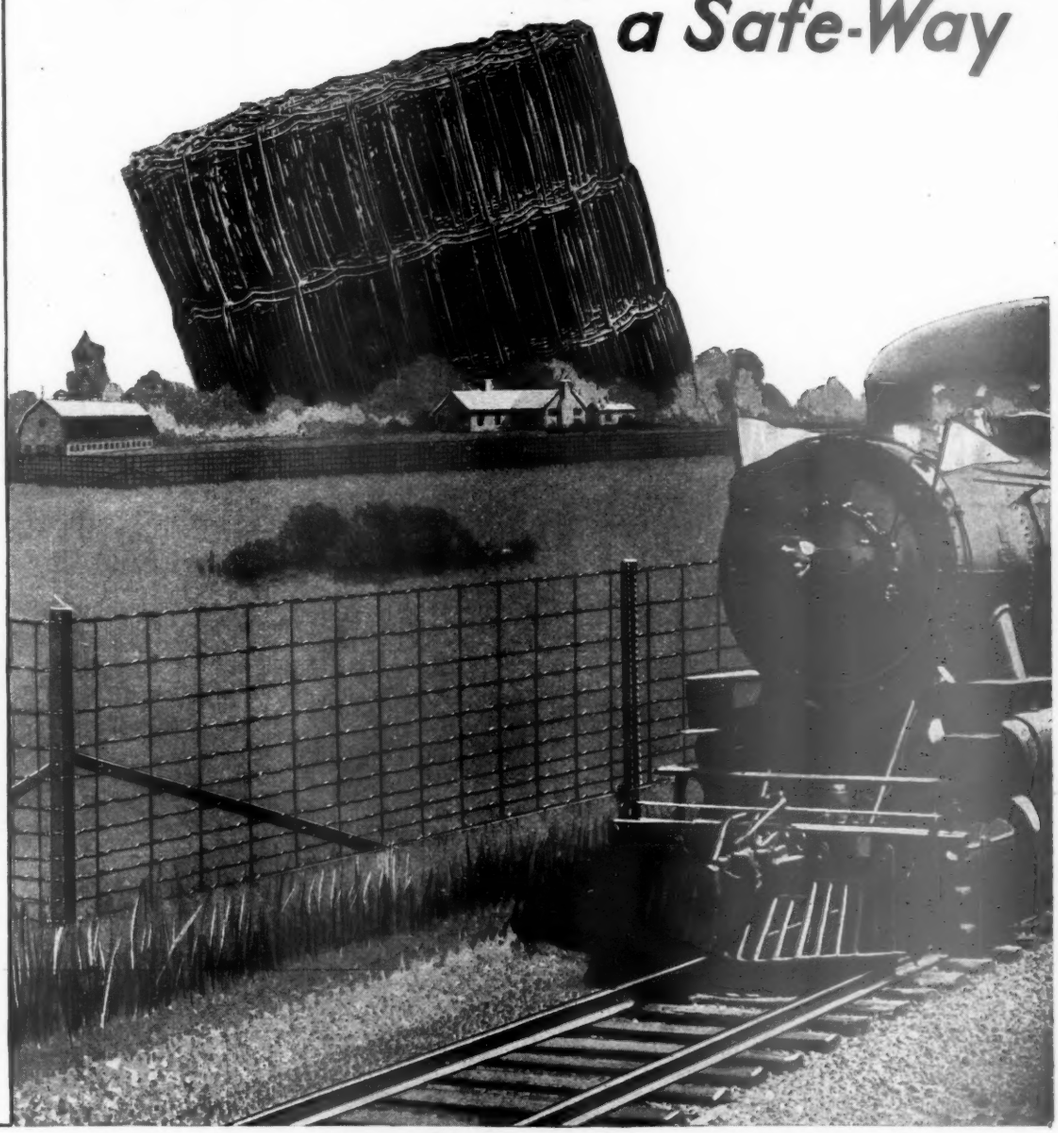


AMERICAN Fence and BANNER STEEL POSTS

IT is cheaper to put up a good fence than to pay stock claims. Likewise it is economy to buy adequate protection—proved protection—such as that offered by American Railroad Fence and Banner Steel Line Posts—the post of railroad rail construction. These products including National Expanding Anchor End and Corner Posts meet every specification recommended by the American Railway Engineering Association.

Make Your Right-of-Way- - a Safe-Way



1831 COMMEMORATING AMERICAN STEEL & WIRE COMPANY 100 YEARS of PROGRESS IN WIRE MAKING 1931

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago SUBSIDIARY OF UNITED STATES STEEL CORPORATION And All Principal Cities

Pacific Coast Distributors: Columbia Steel Company, Russ Building, San Francisco *Export Distributors:* United States Steel Products Company, New York

CHICAGO & ALTON.—*Receivers' Notes.*—The receivers have applied to the Interstate Commerce Commission for authority to issue and sell $1,500,000 of one-year 4½ per cent notes at par to the First Union Trust & Savings Bank, Chicago, for the purpose of paying taxes and interest and dividends on leased lines, etc.

CHICAGO GREAT WESTERN.—*Abandonment.*—This company and the Mason City & Fort Dodge have applied to the Interstate Commerce Commission for authority to abandon the line of the latter company from a point near Fort Dodge, Ia., to Lehigh, 12.14 miles.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Long Grove, Ia., to De Witt, 9.02 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*Annual Report.*—The 1930 annual report of this company shows net income, after interest and other charges, of $7,700,228, as compared with net income of $14,007,320 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	8,183.39	8,110.11	+ 73.28
RAILWAY OPERATING REVENUES	$123,079,909	$147,721,562	—24,641,652
Maintenance of way	15,319,812	20,250,848	— 4,931,035
Maintenance of equip't	21,224,498	27,294,255	— 6,069,757
Transportation	45,447,900	52,145,966	— 6,698,066
TOTAL OPERATING EXPENSES	90,551,758	108,555,384	—18,003,626
Operating ratio	73.57	73.49	+ .08
NET REVENUE FROM OPERATIONS	32,528,151	39,166,177	— 6,638,025
Railway tax accruals	7,198,000	8,212,087	— 1,014,087
Railway operating income	25,296,877	30,921,693	— 5,624,816
Equip't rents —Dr.	4,462,121	4,867,141	— 405,019
Joint facility rents—Dr.	1,086,949	1,205,644	— 118,694
NET RAILWAY OPERATING INCOME	19,747,806	24,848,908	— 5,101,102
Non-operating income	1,375,258	1,282,360	+ 92,898
GROSS INCOME	21,123,065	26,131,269	— 5,008,204
Rent for leased roads	155,334	155,202	+ 131
NET INCOME	7,700,228	14,007,320	— 6,307,092

DENVER & RIO GRANDE WESTERN.—*Acquisition of D. & S. L.*—The Interstate Commerce Commission has granted an extension of time to May 31 in which this company may file its unqualified acceptance of the conditions on which the commission held it would be in the public interest for it to acquire control of the Denver & Salt Lake. The conditions require the purchase of minority stock at the price to be paid for the controlling interest, $155 a share, the establishment of certain routes and the beginning of construction of the Dotsero cut-off.

DETROIT & MACKINAC.—*Operating Agreement.*—The Interstate Commerce Commission has authorized the modification of the agreement between this company and the Erie & Michigan Railway & Navigation Company covering trackage rights of the latter company over the D. & M. between Alabaster Junction, Mich., and East Towas, under which the navigation company was to pay a minimum of $167,286 for the trackage rights, to provide for payments of a percentage of revenues instead.

ERIE.—*Annual Report.*—The 1930 annual report of this company shows net income, after interest and other charges, of $4,171,149, as compared with net income of $11,677,709 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Average Mileage Operated	2,315.74	2,315.97	— .228
RAILWAY OPERATING REVENUES	$108,996,010	$129,230,437	—20,234,426
Maintenance of way	13,278,736	15,130,938	— 1,852,202
Maintenance of equip't	23,144,827	27,979,062	— 4,834,235
Transportation	41,069,776	47,148,049	— 6,078,273
TOTAL OPERATING EXPENSES	84,469,249	97,630,916	—13,161,667
Operating ratio	77.50	75.55	+ 1.95
NET REVENUE FROM OPERATIONS	24,526,761	31,599,521	— 7,072,759
Railway tax accruals	5,086,338	5,627,391	— 541,052
Railway operating income	19,428,442	25,926,125	— 6,497,682
Net Equip't and Joint facility rents —Dr.	4,401,250	4,464,087	— 62,837
NET RAILWAY OPERATING INCOME	15,027,192	21,462,037	— 6,434,845
Non-operating income	5,178,092	4,708,541	+ 469,551
GROSS INCOME	20,205,285	26,170,579	— 5,965,294
Rent for leased roads	2,219,387	2,265,906	— 46,519
TOTAL DEDUCTIONS FROM GROSS INCOME	16,034,135	14,492,869	+ 1,541,266
NET INCOME	4,171,149	11,677,709	— 7,506,560

LONG ISLAND.—*Annual Report.*—The annual report of this company for 1930 shows net income after interest and other charges of $6,017,335, a reduction of $336,340 as compared with net income for 1929. Selected items from the Income Statement follow:

	1930	Increase or Decrease compared with 1929
Average Mileage operated	404.11	
RAILWAY OPERATING REVENUES	$39,596,433	— 1,729,700
Maintenance of Way	4,496,093	— 731,052
Maintenance of Equipment	5,257,353	— 352,587
Transportation	15,302,345	— 566,672
TOTAL OPERATING EXPENSES	26,105,925	— 1,628,754
Operating ratio	65.9	— 1.2
NET REVENUE FROM OPERATIONS	13,490,508	— 101,006
Railway tax accruals	3,453,369	+ 531,144
Railway operating income	10,025,729	— 623,599
Hire of Equipment—Dr.	653,385	+ 53,961
Joint Facility Rents—Dr.	1,376,898	+ 34,936
NET RAILWAY OPERATING INCOME	7,995,445	— 712,497
Non-operating income	875,327	— 24,248
GROSS INCOME	8,870,773	— 736,745
Rent for leased roads	60,000	
Interest on funded debt	2,493,578	— 394,555
TOTAL DEDUCTIONS FROM GROSS INCOME	2,853,437	— 400,404
NET INCOME	6,017,335	— 336,340

LONGVIEW, PORTLAND & NORTHERN.—*Purchase Negotiations Concluded.*—The Chicago, Milwaukee, St. Paul & Pacific, the Great Northern, the Northern Pacific and the Union Pacific have concluded negotiations for the purchase of this railroad which extends between Longview Junction, Wash., and Ryderwood, 29 miles. The stock of the company is all now owned by the Long-Bell Lumber Company. The Great Northern, the Northern Pacific and the Oregon-Washington Railroad & Navigation Company now have trackage rights over the railroad between Longview Junction and Olequa, 21 miles.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a part of a branch line extending from Birchwood, Wis., to its terminus at Reserve, 18.5 miles.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—*Abandonment.*—Examiner C. P. Howard of the Interstate Commerce Commission has recommended in a proposed report that the commission authorize this company to abandon 8.36 miles of branch line in Hickman county, Ky.

NEW YORK, SUSQUEHANNA & WESTERN.—*Annual Report.*—The 1930 annual report of this company shows net deficit after interest and other charges of $59,143, as compared with net deficit in 1929 of $14,905. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
RAILWAY OPERATING REVENUES	$ 4,959,591	$ 5,361,582	— 402,991
Maintenance of way	685,601	742,602	— 57,001
Maintenance of equipment	626,458	714,549	— 88,090
Transportation	2,115,503	2,353,107	— 237,603
TOTAL OPERATING EXPENSES	3,637,248	4,037,637	— 400,388
Operating ratio	73.34	75.31	— 1.97
NET REVENUE FROM OPERATIONS	1,322,342	1,323,944	— 1,602
Railway tax accruals	384,440	372,842	+ 11,598
Railway operating income	937,435	950,092	— 12,657
Net equipment and Joint facility rents—Dr.	284,913	253,121	+ 31,792

Continued on Next Left Hand Page

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ACATHON STEELS

ONLY A few years ago, locomotive materials were confined to plain carbon steel, wrought and cast iron.

● But the modern locomotive, with its higher pressures, increased speeds and greater loads, now has a wide variety of alloy steels to draw upon, many of them developed by Republic metallurgists for the specific set of conditions they must meet.

● Today, higher boiler pressures have brought the Agathon steel boiler shell and the Agathon Alloy steel staybolt.

● Tubes are made of seamless, corrosion-resisting Toncan Iron; pins and bushings of Agathon Nickel Iron; still other special alloy steels go into rods, motion work and axles.

● Modern locomotives have their counterpart in modern materials. You wouldn't build a locomotive that is obsolete in design. Don't build one of obsolete materials. Consult with Republic metallurgists on the steels that best suit each condition of railroad service.

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Mo-lyb-den-um IRON

CENTRAL ALLOY DIVISION

REPUBLIC STEEL CORPORATION

Massillon, Ohio

	1930	1929	Increase or Decrease
Net Railway Operating Income	652,522	696,971	— 44,449
Non-operating income	89,469	88,931	+ 538
Gross Income	741,992	785,902	— 43,910
Rent for leased roads	25,593	24,335	+ 1,257
Total Deductions from Gross Income	801,135	800,808	+ 327
Net Deficit	59,143	14,905	+ 44,238

Norfolk & Western.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon part of its Potts Valley branch, from Oehl, Va., to Paint Bank, 33.5 miles.

Norfolk & Western.—*Hearing on Recapture Valuation.*—The Interstate Commerce Commission has announced a hearing to be held at Washington on June 1 before Examiner Walton at which this company may present evidence in support of its protest against the tentative recapture report recently made public by the commission which finds the company subject to recapture to the extent of $15,849,344 for the years 1924, 1925 and 1926. Evidence may also be presented by the Bureau of Valuation and the notice states that on failure of the company to appear in support of its protest the tentative report may be made final by further order of the commission.

Sabine Basin.—*Acquisition and Construction Disapproved.*—The Interstate Commerce Commission has denied the application of this company, the Beaumont, Sour Lake & Western, the Gulf, Colorado & Santa Fe, the Atchison, Topeka & Santa Fe, and the Missouri Pacific for a certificate authorizing the acquisition by the Sabine company of the Eastern Texas Electric and its construction of a 22-mile extention thereto. The application of the Beaumont, Sour Lake & Western and the Atchison, Topeka & Santa Fe to acquire joint control of the Sabine company was also denied.

St. Louis-San Francisco.—*Bonds.*—The Interstate Commerce Commission has authorized this company to secure the authentication and delivery of $2,311,000 of its first terminal and unifying mortgage bonds to reimburse its treasury for capital expenditures. The road has been authorized to issue these bonds and to pledge and repledge them as collateral security for promissory notes.

Wheeling & Lake Erie.—*Annual Report.*—The annual report of this company for 1930 shows net income, after interest and other charges, of $2,647,819, as compared with net income of $4,679,321 in 1929. Selected items from the Income Statement follow:

	1930	1929	Increase or Decrease
Railway Operating Revenues	$16,358,984	$21,335,222	—4,976,238
Maintenance of way	1,875,037	2,553,713	— 678,676
Maintenance of equipment	4,213,092	5,069,848	— 856,756
Transportation	4,899,685	6,022,993	—1,123,308
Total Operating Expenses	11,977,413	14,693,177	—2,715,764
Operating ratio	73.22	68.87	+ 4.35
Net Revenue from Operations	4,381,570	6,642,044	—2,260,474
Railway tax accruals	1,451,523	1,556,020	— 104,497
Railway operating income	2,929,713	5,085,125	—2,155,412
Joint facility rents	7,222	25,579	— 18,357
Non-operating income	672,528	617,050	+ 55,478
Gross Income	3,602,242	5,702,176	—2,099,934
Interest on funded debt	791,927	818,727	— 26,800
Total Deductions from Gross Income	954,423	1,022,855	— 68,432
Net Income	2,647,819	4,679,321	—2,031,502

Average Prices of Stocks and of Bonds

	May 5	Last week	Last year
Average price of 20 representative railway stocks	74.69	73.14	126.71
Average price of 20 representative railway bonds	92.56	91.29	93.58

Dividends Declared

Delaware & Hudson.—$2.25, quarterly, payable June 20 to holders of record May 28.

New York, Chicago & St. Louis.—Common and Preferred, $1.50, quarterly, both payable July 1 to holders of record May 15.

Railway Officers

EXECUTIVE

William D. Robb, vice-president of the Canadian National, in charge of telegraphs, colonization, natural resources, radio, insurance, etc., will retire on June 30, and the vice-presidency occupied by Mr. Robb will be abolished.

FINANCIAL, LEGAL AND ACCOUNTING

Norman S. Buckingham, assistant general counsel of the New York, New Haven & Hartford, has been appointed general counsel, succeeding **Benjamin I. Spock,** deceased.

E. M. Thomas, comptroller of the Chesapeake & Ohio and also of the Pere Marquette, was transferred from Richmond, Va., to Cleveland, Ohio, effective May 1. **O. M. Hepler,** assistant comptroller, will assume immediate charge of all the accounting department work at Richmond, Va.

L. E. McKeand, recently appointed comptroller of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., was born in Nashville, on September 30, 1877, and received his education in the public schools of his native city. He entered railroad service with the N. C. & St. L., in 1896, as clerk and stenographer in the office of the chief engineer. In August, 1902, he was promoted to chief clerk to the chief engineer. In 1914, he was appointed a member of the valuation committee, where he served as valuation auditor until the World War, when the railroads were placed under Federal control. During the period of Government operation he served as corporate auditor of the N., C. & St. L, and upon the return of the railroads to private operation he was appointed auditor of miscellaneous accounts, which position he held until March 23, 1926, when he was appointed treasurer and assistant to the president. On April 8, 1930, Mr. McKeand was named assistant comptroller, which position he held, in addition to the posts of treasurer and assistant to the president, until his recent promotion to comptroller.

David S. Huggins, who was recently appointed to succeed **L. E. McKeand** as treasurer of the Nashville, Chattanooga & St. Louis, in addition to his duties as transfer agent and assistant secretary, was born at Nashville, Tenn., on February 19, 1899, and received his education at Wallace University School at Nashville, and Vanderbilt University. Mr. Huggins' first railway employment was in the division freight office of the

David S. Huggins

Southern at Jacksonville, Fla.; later, he was connected with the DuPont Engineering Company. During the World War he enlisted in the United States Navy, receiving his discharge in 1919, immediately after which he entered the service of the N., C. & St. L. as secretary to the treasurer. His connection with the treasury department has been constant since that date. On April 21, 1926, he was appointed assistant treasurer, transfer agent and assistant secretary, and has continued to fill these positions until his recent promotion.

OPERATING

W. W. Preisch, special agent of the car service department of the Lehigh Valley, with headquarters at Bethlehem, Pa., has been promoted to supervisor of transportation, with the same headquarters.

W. A. Kingsland, general manager of

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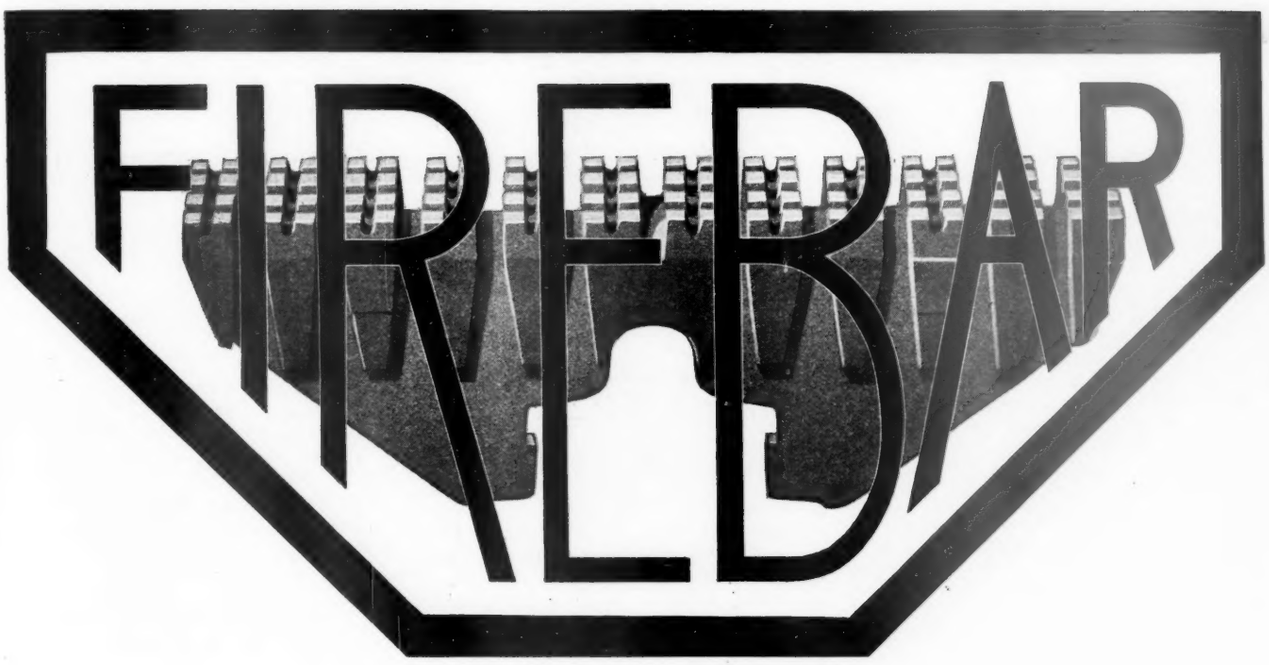

BETTER FIRES

FIREBAR CORPORATION
CLEVELAND OHIO.

the central region of the Canadian National has been appointed to a similar position with the Montreal & Southern Counties Railway; the Oshawa Railway; and the Thousand Island Railway.

W. N. Garvin has been appointed acting superintendent of the St. Louis Terminal division of the Wabash at St. Louis, Mo., temporarily succeeding **J. W. Jones**, superintendent, who was granted a leave of absence because of ill health on April 27.

The Southern Pacific, on May 1, combined the Stockton division with the **Western division**, and **G. E. Gaylord**, superintendent of the former division, has been appointed superintendent of the Western division, with headquarters at Oakland Pier, Cal., and Stockton. **T. F. Rowlands**, superintendent of the Western division, with headquarters at Oakland Pier, has been granted a voluntary leave of absence, which will remain in effect until his retirement under the pension rules of the company on August 31. **L. C. Gram**, assistant superintendent of the Portland division at Eugene, Ore., has been transferred to the Salt Lake division at Sparks, Nev., succeeding **T. J. Foley**, who has been transferred to the Shasta division at Dunsmuir, Cal. Mr. Foley replaces **J. J. Sullivan**, who has been appointed trainmaster on the Shasta division at Dunsmuir, where he succeeds **B. S. Bauman**, who has been transferred to the Salt Lake division at Sparks. Mr. Bauman succeeds **G. H. Moore**, who has been transferred to Susanville, Cal., on the Salt Lake division, replacing **G. H. Kilborn**, who has been transferred to the Portland division at Roseburg, Ore. Mr. Kilborn replaces **F. W. Cantrell**, who has been appointed chief dispatcher at Portland, Ore. **S. H. Bray** has been appointed trainmaster on the Salt Lake division at Carlin, Nev., succeeding **E. C. Pearce**, who has been transferred to the Tuscon division at Lordsburg, N. M. Mr. Pearce replaces **L. Kocher**, who has been transferred to the Coast division at Salinas, Cal.

TRAFFIC

D. E. Gilbert, assistant general freight agent of the Wabash at Toledo, Ohio, has been appointed acting general freight agent, with headquarters at St. Louis, Mo.

R. H. Ludlam, commercial agent of the Norfolk & Western, has been appointed general agent, succeeding **D. W. Champlin**, deceased. Mr. Ludlam's headquarters will be located at Richmond, Va., as before.

Francis N. Westerman, who has been promoted to general passenger agent of the Southern, with headquarters at Cincinnati, Ohio, has been connected with that system for nearly 32 years. He was born at Parkersburg, W. Va., on September 15, 1874, and attended the public schools of Columbus, Ohio. At the age of 16 years he obtained his first railway experience in the operating department of the Columbus, Hocking Valley & Toledo (now part of the Chesapeake & Ohio). Later he served with that railroad in the accounting department and as chief rate clerk in the

F. N. Westerman

passenger department. Mr. Westerman entered the service of the Southern in June, 1899, in the passenger department at Washington, D. C. Later he was advanced successively through the positions of division clerk, rate clerk, chief rate clerk, and chief clerk in the passenger department. In November, 1913, he was promoted to assistant general passenger agent at St. Louis, Mo., where he remained until January, 1917, when he was transferred to Cincinnati. He was transferred to Washington in December, 1922, and returned to Cincinnati in July, 1926. His promotion to general passenger agent at Cincinnati became effective on April 15.

E. N. Aiken, recently appointed assistant passenger traffic manager of the Southern at Atlanta, Ga., was born at Cincinnati, Ohio, on October 8, 1877, and received his education in the public

E. N. Aiken

schools at Cincinnati and Madisonville, Ohio, and the normal school at Geneva, Ohio. He entered railway service on March 1, 1896, with the New York Central & Hudson River as stenographer in the general passenger department at New York, and seven months later was promoted to rate and division clerk in the passenger department. In August, 1902, he entered the service of the Cincinnati, New Orleans & Texas Pacific and the Alabama Great Southern (both now parts of the Southern Railway System), as division clerk in the general passenger department at Cincinnati. From July, 1904, to October, 1905, he served as traveling passenger agent of the Cincinnati, New Orleans & Texas Pacific at Lexington, Ky., and the following year he was promoted to northeastern passenger agent of that road. In 1908, he was appointed chief rate clerk in the general passenger department, and at the same time he resumed his connection with the Alabama Great Southern, and undertook a similar position with that road. While serving in that capacity for these roads, his headquarters were located at Cincinnati. In the fall of that year Mr. Aiken was promoted to chief clerk, and in November, 1912, he became assistant general passenger agent, which position he held until January, 1917, when he became connected with the Southern, as general passenger agent at Cincinnati. From July, 1926, to December, 1928, he held a similar position at Washington, D. C., and on the latter date he was appointed general passenger and ticket agent at Atlanta, Ga., the position he held until his recent promotion.

ENGINEERING AND SIGNALING

E. H. Shipman, chief engineer of the Lehigh & New England and corporate engineer of the Lehigh Coal & Navigation Company, has moved his office from Bethlehem, Pa., to Allentown.

R. A. Morrison, division engineer of the former Port Huron-Grand Rapids division of the Pere Marquette, with headquarters at Saginaw, Mich., has been transferred to the newly created Detroit-Grand Rapids division, with headquarters at Detroit, Mich. **A. R. Dewees**, division engineer of the former Detroit-Canadian division, has been transferred to the Canadian division and the Detroit terminals, with headquarters as before at Detroit.

Frank R. Layng, assistant chief engineer of the Bessemer & Lake Erie, has been promoted to chief engineer, with headquarters as before at Greenville, Pa., succeeding **Henry T. Porter**, who retired from active service on May 1. **Herbert H. Harman**, engineer of bridges and buildings, has been appointed engineer of track, with headquarters as before at Greenville. **John S. Ekey**, supervisor of structures at Greenville, has been promoted to engineer of bridges and buildings, succeeding Mr. Harman. **George R. Martin**, senior supervisor of track at Greenville, has been appointed assistant engineer at that point. **Michael F. Mannion**, statistician, has been appointed office assistant to the chief engineer at Greenville. The positions of assistant chief engineer, senior

Continued on Next Left Hand Page

The BULLET

The "Bullet," a luxuriously appointed coach train, is now in operation between Wilkes-Barre and New York on the New Jersey Central. It provides a fast and reliable train between these two points as well as marked comfort for the passenger.

The "Bullet" is pulled by modern Pacifics capable of handling these fast trains with ease on the heavy grades over which they must operate.

A feature in the equipment of these locomotives is the Elesco feed water heater which indirectly transfers heat in the exhaust steam — not from the firebox — to the boiler through the medium of the feed water.

The result — 15 per cent fuel savings and 15 per cent additional boiler capacity — is a valuable aid to the successful operation of these locomotives.

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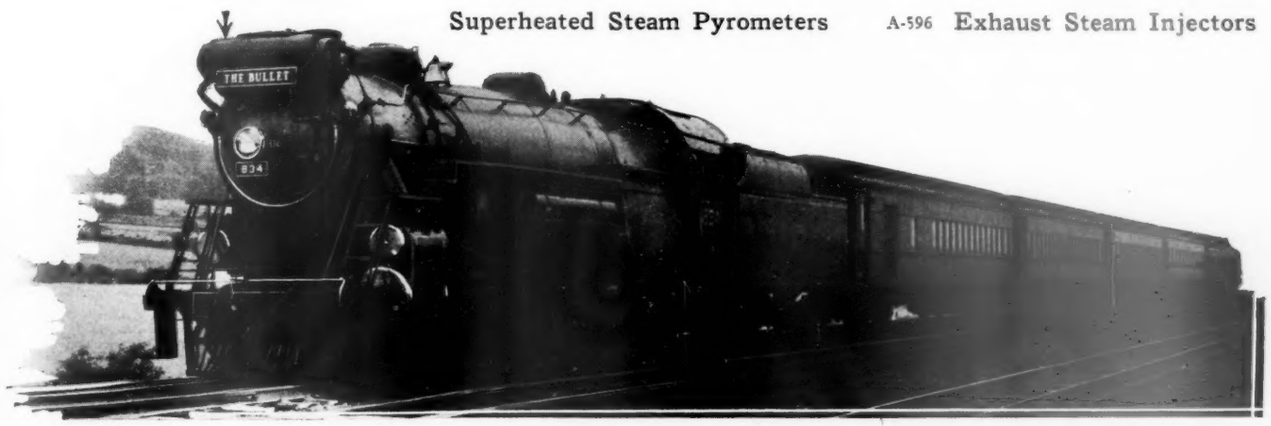

supervisor of track and statistician have been abolished.

B. R. Kulp, division engineer of the Madison division of the Chicago & North Western at Madison, Wis., has been promoted to principal assistant engineer, with headquarters at Chicago, a newly created position. **R. W. Richardson,** division engineer of the Northern Iowa and Sioux City divisions at Sioux City, Iowa, has been transferred to the Madison division, succeeding Mr. Kulp. **E. C. Vandenburgh,** supervisor of bridges and buildings at Madison, has been promoted to division engineer of the Northern Iowa and Sioux City divisions, to replace Mr. Richardson.

B. R. Kulp

Mr. Kulp, who was promoted to principal assistant engineer on May 1, has been in the service of the North Western for 26 years. He was born at Duncannon, Pa., on December 16, 1883, and attended the public schools at Harrisburg, Pa. After graduating from Rensselaer Polytechnic Institute in 1905, he obtained his first railroad experience as an instrumentman on the Galena division of the North Western. Later he was advanced to draftsman and to assistant engineer of maintenance on that division, and in 1909 he was transferred to the terminal improvements at Clinton, Iowa. During 1910 and 1911 he served as assistant engineer on the yard improvements at Proviso, Ill., and in 1912 he was promoted to division engineer of the Ashland division at Antigo, Wis. Mr. Kulp was appointed trainmaster on the Southern Illinois division at Benld, Ill., in 1917, where he remained until 1918, when he was transferred to the Galena division at Chicago. In 1920 he returned to the engineering department as division engineer of the Madison division, where he remained until his promotion to principal assistant engineer.

MECHANICAL

R. C. McIntyre has been appointed master mechanic of the Union Railroad, succeeding **Charles R. Church,** retired. Mr. McIntyre's headquarters will be located at East Pittsburgh, Pa.

SPECIAL

Ray J. Maxwell, assistant general manager of advertising of the Wabash, has been promoted to manager of advertising, with headquarters as before at St. Louis, Mo.

W. Y. Muirhead has been appointed director of insurance of the Canadian National, succeeding **W. D. Keeson,** resigned. Mr. Muirhead entered the service of the C. N. R. at Toronto, Ont., in 1905, serving as a clerk on matters concerning insurance, taxes, statistics, etc., and was appointed insurance commissioner in 1915, and in that position moved from Toronto to Montreal, Que., in 1923.

OBITUARY

Frank M. Stewart, first superintendent of dining cars of the Chicago, Rock Island & Pacific, died at Davenport, Iowa, on March 24 at the age of 84 years. Mr Stewart served as superintendent of dining cars with headquarters at Davenport from 1881 to 1912.

W. W. Strickland, freight auditor of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., died in the Santa Fe hospital in that city on April 30, at the age of 59 years. Mr. Strickland had been in the service of the Santa Fe for 42 years and had been freight auditor since 1911.

THE GASOLINE TAX yielded a net revenue of $494,683,410 in 1930 and nearly fifteen billion gallons of gasoline were used by the motor vehicles of the United States, according to reports received by the Bureau of Public Roads, U. S. Department of Agriculture, from State agencies.

As compared with 1929, the tax revenue increased 14.6 per cent and the consumption of gasoline 3½ per cent in spite of the fact that there was no increase in the total number of motor vehicles. The average consumption per vehicle was 556 gallons in 1930 as compared with 538 gallons in 1929.

A gasoline tax was imposed in all the States, the rate ranging from two to six cents per gallon, the average rate was 3.35 cents. The net revenue of $494,683,410 was allocated as follows: $1,102,187 for collection expenses; $338,927,564 for State highways; $96,225,637 for local roads; $20,869,901 for State highway bond payments; $10,179,135 for local road bond payments; $11,842,930 for city streets; $13,404,200 for schools, and $2,131,856 for miscellaneous expenditures.

Annual Reports

Annual Report of the Minneapolis, St. Paul & Sault Ste. Marie Railway Co.

Wisconsin Central Railway Company

For the fiscal year ended December 31st, 1930.

To the Stockholders:

Submitted herewith is a report for the fiscal year ended December 31, 1930.

The Gross Revenue, Operating Expenses, Fixed Charges, Net Income, etc., are shown in the following condensed statement:

	Soo Line (Soo District)	Wis. Cent. Ry. (Chicago District)	System 1930	System 1929
Gross Revenue	$24,169,660.02	$15,723,198.12	$39,892,858.14	$48,653,651.08
Operating Expenses	18,172,155.15	13,123,711.52	31,295,866.67	35,321,217.74
Net Revenue	$5,997,504.87	$2,599,486.60	$8,596,991.47	$13,332,433.34
Income from Other Sources	1,343,879.07	169,188.94	1,513,068.01	1,266,933.05
Total Income	$7,341,383.94	$2,768,675.54	$10,110,059.48	$14,599,366.39
Fixed Charges, Taxes, etc.	8,032,337.18	5,056,045.19	13,088,382.37	12,674,116.71
Net Income	*$690,953.24	*$2,287,369.65	*$2,978,322.89	$1,925,249.68

* Dr.

[ADVERTISEMENT]

Gross Revenue for the System during 1930 was $39,892,858.14, a decrease of $8,760,792.94, or 18.01%, compared with the previous year.

Freight Revenue for the System during 1930 was $33,142,170.04, a decrease of $6,609,649.06, or 16.63%, compared with the previous year.

The decreases in Freight Revenue were as follows:

Products of Agriculture	$ 459,467
Products of Forests	1,380,473
Less than Carload Freight	970,283
Animals and Products	402,257
Products of Mines	1,495,598
Manufactures and Miscellaneous	1,901,571
Total Decrease	$6,609,649

Products of Agriculture decreased in movement as a result of drouth and market conditions. Grain moving from west of Minneapolis and Duluth during the period August 1, 1930 to December 31, 1930, was 27,595,647 bushels, as compared with 21,343,750 bushels during the corresponding period of 1929. The total number of bushels moved from this territory during the entire calendar year 1930 was 39,119,538, as compared with 38,646,528 in 1929. It is estimated that the number of bushels of grain in elevators and on farms as of December 31, 1930, was 19,026,279, compared to 22,680,221 bushels on December 31, 1929. Until the first part of July, 1930, crop prospects were exceptionally favorable but after that time the drouth curtailed grain yields. It also had a bad effect on other crops, especially potatoes. The slight increase in the amount of grain handled from western points was much more than offset by decreases in the movement of grain from other points, potatoes, millstuffs, and other miscellaneous products of agriculture.

Products of Forests decreased, due principally to the general depression, and partly to the depletion of timber resources in territories served by our line.

Less than Carload Freight decrease was due to truck competition, poor business conditions, and the activities of forwarding companies handling pool cars. A strong forwarding company is now shipping assembled carloads over our rails.

Animals and Products decrease was due largely to more cattle and hogs being transported by trucks and a smaller movement of Canadian cattle into our country caused by the increase in our tariff through the operation of the so-called Hawley-Smoot Bill.

Products of Mines decrease was caused principally by less movement of iron ore, coal, sand, and gravel. The extremely mild weather curtailed domestic demand for coal, and less commercial coal was needed on account of reduced manufacturing activity. The total movement of iron ore from the Lake Superior district via all railroads was 66,157,359 tons in 1929 and 47,187,661 tons in 1930. The reduction in the movement of sand and gravel was caused by decreased construction and building.

Manufactures and Miscellaneous decreased as a result of the general business depression.

Comparisons of Cars Loaded on our line and received from connections, and revenue, 1926 to 1930, inclusive, are shown in the statement below:

	(000 Omitted from Revenue) 1926	1927	1928	1929	1930
Products, Agricultural:					
Cars	82,558	93,947	100,157	80,619	73,372
Revenue	$6,935	$8,970	$10,206	$7,589	$7,129
Products, Animal:					
Cars	39,925	36,180	35,432	34,114	27,591
Revenue	$2,907	$2,659	$2,594	$2,554	$2,152
Products, Mines:					
Cars	133,056	139,092	141,548	158,910	120,825
Revenue	$6,119	$6,663	$6,374	$7,050	$5,554
Products, Forest:					
Cars	141,990	148,599	132,744	129,965	95,780
Revenue	$6,421	$6,618	$6,016	$5,982	$4,602
Miscellaneous:					
Cars	123,000	125,253	136,164	136,390	116,697
Revenue	$9,140	$9,564	$11,153	$11,640	$9,738
Merchandise:					
Tons	502,191	503,582	483,520	461,194	382,760
Revenue	$5,223	$5,237	$5,130	$4,937	$3,967
Grand Total:					
Cars	520,529	543,071	546,045	539,998	434,265
Revenue	$36,745	$39,711	$41,473	$39,752	$33,142

GENERAL BALANCE SHEET, DECEMBER 31, 1930

Assets

Property Investment:		
Road	$104,734,719.78	
Equipment	31,157,355.08	
Less Reserve for Equipment Depreciation	$135,892,074.86 13,292,091.64	
Total		$122,599,983.22
Sinking Fund		497.63
Deposits in lieu of Mortgaged Prop. Sold		4,884.94
Miscellaneous Physical Property		3,196,442.00
Wis. Cent. Ry. Co., Preferred Stock (Pledged for M. St. P. & S. S. M. Ry. Co., 4% Leased Line Certificates)		11,249,500.00
Investments in Proprietary, Affiliated, and Controlled Companies:		
Stocks	$12,383,379.47	
Bonds	8,000,000.00	
W. C. Ry. Co. Equipment Contracts	2,175,169.65	
W. C. Ry Co. Advances	5,600,002.62	
Other Advances	2,158,515.87	
Total		30,317,067.61
Other Investments:		
Stocks	$ 1.00	
Bonds	1,906,200.00	
Notes	182,014.56	
Real Estate Sales Contracts	30,264.44	
Total		2,118,480.00
Current Assets:		
Cash	$ 1,323,802.66	
Time Drafts and Deposits	2,850,000.00	
Special Deposits	1,984,165.61	
Loans and Bills Receivable	185.44	
Traffic and Car Service Balances	277,929.73	
Agents and Conductors Balances	465,662.51	
Miscellaneous Accounts Receivable	526,848.91	
Material and Supplies	3,944,924.78	
Interest and Dividends Receivable	171,425.34	
Other Current Assets	36,742.64	
Total		11,581,687.62
Deferred Assets:		
Working Fund Advances	$ 26,074.97	
Other Deferred Assets	197,775.68	
Total		223,850.65
Unadjusted Debits:		
Rents and Insurance Paid in Advance	$ 32,073.22	
Discount on Funded Debt	939,416.92	
Other Unadjusted Debits	1,525,773.90	
Total		2,497,264.04
Grand Total		$183,789,657.71

Liabilities

Capital Stock:		
Common	$25,206,800.00	
Preferred	12,603,400.00	
Total		$ 37,810,200.00
Governmental Grants:		
Grants in Aid of Construction		3,224.89
Funded Debt Unmatured		104,572,800.00
M. St. P. & S. S. M. Ry. Co. 4% Leased Line Certificates (Issued in exchange for Preferred Stock of Wis. Central Ry. Co., held by Trustee.)		11,249,500.00
Non-negotiable Debt to Affiliated Companies		1,536,457.70
Current Liabilities:		
Traffic and Car Service Balances	$ 417,341.71	
Audited Vouchers and Wages Payable	1,914,661.02	
Miscellaneous Accounts Payable	91,892.12	
Interest Matured Unpaid	1,991,305.80	
Funded Debt Matured Unpaid	1,000.00	
Unmatured Interest Accrued	411,501.58	
Unmatured Rents Accrued	6,816.13	
Other Current Liabilities	120,966.63	
Total		4,955,484.99
Deferred Liabilities		
Equipment Purchase Contracts	$ 1,808,279.61	
Other Deferred Liabilities	25,832.60	
Total		1,834,112.21
Unadjusted Credits:		
Tax Liability	$ 1,235,415.71	
Premium on Funded Debt	1,066.71	
Insurance and Casualty Reserves	43,045.37	
Other Unadjusted Credits	1,597,941.02	
Total		2,877,468 81
Corporate Surplus:		
Additions to Property thru Income and Surplus	$ 255,226.62	
Funded Debt Retired thru Income and Surplus	221,000.00	
Sinking Fund Reserve	497.63	
Profit and Loss-Credit Balance	18,473,684.86	
Total		18,950,409.11
Grand Total		$183,789,657.71

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Passenger Revenue was $3,392,898.43, a decrease of $1,240,594.71, or 26.77%, the decrease being about equally divided between local passenger traffic and interline or through traffic. The local decrease was occasioned by poor business conditions, and the increased use of public busses and private automobiles, by reason of improved highways. The decrease in through traffic was due to a lack of large conventions on the Pacific Coast and to business depression.

Revenue from Milk and Cream handled in baggage cars was $429,934.30, a decrease of $64,841.13, of which $35,240.64 was on the Soo District and $29,600.49 on the Chicago District. The decrease on both districts was due to retarded production, surplus supply of butter in storage, and extended trucking to creameries.

In addition to the movement of milk and cream in baggage cars, the Chicago district handled milk in tank cars producing freight revenue of $55,127.81 as compared with $114,210.00 during the previous year. This decrease was caused by lack of demand for Wisconsin milk in Chicago and the east due to unemployment, general business depression, and increased long distance trucking.

Department of Agricultural Development. During the year the Department of Agricultural Development conducted three principal series of demonstrations in towns along our lines, using specially fitted exhibition cars. Objectives were the production of better potatoes; an increase in the acreage of alfalfa and sweet clover; and the improvement of dairy herds through the placement of pure bred sires. In the 205 communities which were visited a total of 64,210 people attended the programs. Field projects started in previous years, covering fertilizer demonstrations, corn variety tests, and potato development were continued, as was also the placement of breeding ewes, pure bred rams, and dairy cattle through the Agricultural Credit Corporation. The general impression is that these activities have been a great help to the agricultural communities. The resultant increases in good grade stock are evidenced by the fact that farmers now buy and sell pure bred and high grade animals among themselves, instead of importing them from other districts, as before.

Maintenance of Way and Structures expenses decreased $687,565.00. Of this decrease $384,000.00 was in labor. Maintenance expenses have been budgeted for the last ten years and expenditures during that time for rail, ballast, and treated ties have resulted in maintenance economies which will be permanent.

Maintenance of Equipment expenses decreased $1,026,488.00. Of this amount, $798,000.00 represents a direct saving in labor and material, although there were increases in wages amounting to $96,000.00 by reason of agreements made in 1929.

The purchase of modern freight power and the retiring of small power maintained at a much heavier expense, also the purchase of new and retiring of old freight equipment has resulted in a saving in maintenance costs. During the year the Fond du Lac locomotive shop was closed permanently as a heavy repair point for locomotives and the work transferred to Minneapolis with but slight increase in force at the latter point. The passenger car shop at Fond du Lac was also closed permanently and the work transferred to Minneapolis.

Transportation expenses decreased $2,311,563.00 or 13.39%. Gross ton miles, representing transportation effort required to handle the traffic, decreased 1,311,875,000 or 14.93%. It was impossible to reduce expenses to the same degree as the reduction in gross ton miles, due to the necessity of providing certain fixed service regardless of traffic available for movement. The transportation ratio was 37.48 as compared to 35.48 last year. Had gross passenger revenues remained the same as the previous year, the ratio would have been 35.70.

Hire of Equipment charges decreased $139,300.00. This was due to a decrease in business resulting in less per diem paid other lines for the use of their equipment.

Additions and Betterments. There was expended during the year for normal additions and betterments to road, a net amount of $827,820.72.

In the Annual Report for the year 1929 full information was given as to the pooling contract with the Northern Pacific Railway Company covering Cuyuna Range ore and coal traffic, by which this Company accomplished substantial savings in operation, and, among other things, abandoned its ore dock at Superior, Wisconsin, and 32.31 miles of track. This resulted in the year 1930 in a decrease in the Investment Account of $3,304,927.68, an increase in material and other assets of $719,857.59, and a charge to Profit and Loss Account of $2,585,070.09.

Expenditures for additions and betterments to equipment, including the purchase of 200 box cars and 200 gondola cars were $1,253,692.90; equipment retirements including 19 locomotives and 522 box cars, amounted to $942,288.77; producing a net increase of $311,404.13.

Funded and Unfunded Debt. The outstanding indebtedness was increased during the year, a net amount of $3,759,576.83, as follows:

Increases:		
Minneapolis, St. Paul & Sault Ste. Marie Railway Company:		
First Refunding Mortgage, Series "B" Bonds	$12,106,000.00	
Equipment Purchase Contract	1,020,340.00	
Wisconsin Central Railway Company:		
First and Refunding Mortgage Bonds	10,000,000.00	
Total Increase		$23,126,340.00
Decreases:		
Minneapolis, St. Paul & Sault Ste. Marie Railway Company:		
First Refunding Mortgage, Series "A" Bonds	$23,000.00	
Twenty-five Year Gold Notes	100,000.00	
Equipment Trust Notes	1,256,000.00	
Equipment Purchase Contracts	481,763.17	
Wisconsin Central Railway Company:		
Marshfield & Southeastern Division Mortgage	6,000.00	
Three Year Secured Notes	7,500,000.00	
Total Decrease		$9,366,763.17
Increase		$13,759,576.83
The $10,000,000 Wisconsin Central Railway Company First and Refunding Mortgage Bonds were purchased by the Minneapolis, St. Paul & Sault Ste. Marie Railway Company and deposited with the Trustee of its First Refunding Mortgage		10,000,000.00
Net Increase in outstanding Indebtedness		$3,759,576.83

Securities purchased during the year and held in the Soo Line Treasury on December 31, 1930, were as follows:

First Refunding Mortgage Bonds, Series "A"	$19,000.00
Ten Year Collateral Trust Gold Bonds	1,115,000.00
Twenty-five Year 5½% Gold Notes	91,400.00
Equipment Trust Notes, Series "J"	3,000.00
Equipment Trust Notes, Series "O"	3,000.00
Total	$1,231,400.00

The above equipment purchase contract aggregating $1,020,340.00 was made in the acquisition of 200 gondola cars and 200 box cars.

As stated in the 1929 Annual Report, the Minneapolis, St. Paul & Sault Ste. Marie Railway Company issued $12,106,000 of its First Refunding Mortgage Bonds, Series "B", and sold $8,000,000 of these bonds as of January 2, 1930, using the proceeds to defray in part the cost of $10,000,000 of the Wisconsin Central Railway Company First & Refunding Bonds which it purchased for $8,000,000 in cash, thus enabling the Wisconsin Central Railway Company to retire $7,500,000 notes maturing January 2, 1930. The Wisconsin Central has charged the discount of $2,000,000 on its First & Refunding Bonds to Profit and Loss Account. On August 19, 1930, the Soo Line sold the remaining $4,106,000 of its First Refunding Mortgage Bonds, Series "B," and placed the proceeds in its treasury.

General. As our figures show, the year 1930 was a disastrous one for the System, especially for the Chicago District, as its business is made up largely of the products of mines, forests, and miscellaneous merchandise, in which we had large decreases in tonnage.

Immediately after the financial crash in the latter part of 1929, our business began to show a falling-off which reached serious proportions during 1930. Our heaviest decline in business was a loss of over 70,000 cars in the products of mines, forests, and livestock. The loss in the movement of agricultural products was not so serious because of the fair grain crops of 1929 and 1930.

Since the organization of the Federal Farm Board in 1929, the natural flow of farm products to market has been considerably retarded. Advice given to farmers in the Fall of 1929 and again in the Fall of 1930 to hold their grain for higher prices resulted in many thousands of farmers refusing to sell and finally being forced to do so at much lower prices. This decreased the farmers' buying power, which had a very depressing influence on business.

The new tariffs put into effect by the United States and Canada during 1930 have also had quite an adverse effect upon our business. The loss in interchange of loaded cars between the Canadian Pacific and ourselves amounted to 13,918 cars for the year. However, a part of this loss undoubtedly arose from business conditions.

The property has been well maintained and we are in a position to continue the reductions already made in our expenses until such time as business again becomes normal.

C. T. JAFFRAY,
President.

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Seventy-Seventh Annual Report of the Chicago, Burlington & Quincy Railroad Company

Chicago, January 2, 1931.

To the Stockholders of the Chicago, Burlington & Quincy Railroad Company:

The following is the report of your Board of Directors for the year ended December 31, 1930:

Comparative Statement of Income, Years Ended December 31

Per cent of Ry. Oper. Revenue	1930	RAILWAY OPERATING REVENUES	1929	Per cent of Ry. Oper. Revenue
78.62	$111,157,127.79	Freight	$126,777,843.96	78.06
10.86	15,360,185.57	Passenger	18,817,973.10	11.59
3.35	4,736,925.42	Mail	4,772,937.57	2.94
2.48	3,501,774.58	Express	4,435,119.24	2.73
2.55	3,603,112.47	All other transportation	4,157,410.57	2.56
1.57	2,216,891.48	Incidental	2,547,035.42	1.57
.57	803,404.61	Joint facility	901,604.75	.55
100.00	$141,379,421.92	Total railway operating revenues	$162,409,924.61	100.00
		RAILWAY OPERATING EXPENSES		
14.37	$ 20,311,640.40	Maintenance of way and structures	$ 24,414,604.84	15.03
15.95	22,553,488.43	Maintenance of equipment	26,080,966.31	16.06
2.45	3,456,599.52	Traffic	3,353,452.35	2.06
33.19	46,922,910.67	Transportation	52,083,143.89	32.07
1.02	1,444,451.97	Miscellaneous operations	1,611,939.21	.99
3.13	4,426,143.19	General	4,508,564.49	2.78
Cr..17	Cr. 237,420.70	Transportation for Investment—Credit	Cr. 487,128.62	Cr..30
69.94	$ 98,877,813.48	Total railway operating expenses	$111,565,542.47	68.69
30.06	$ 42,501,608.44	Net revenue from railway operations	$ 50,844,382.14	31.31
.....	$ 11,191,876.57	Railway tax accruals	$ 12,025,393.54	.....
.....	30,200.02	Uncollectible railway revenues	26,562.54	.....
.....	$ 31,279,531.85	Railway operating income	$ 38,792,426.06	.....
.....	Dr.1,087,321.50	Hire of equipment—Net	Dr.1,267,146.48	.....
.....	Dr.2,236,145.97	Joint facility rents—Net	Dr.2,167,316.76	.....
.....	$ 27,956,064.38	Net railway operating income	$ 35,357,962.82	.....
		OTHER NON-OPERATING INCOME		
.....	$ 632,584.20	Miscellaneous rent income	$ 589,206.01	.....
.....	2,847,134.25	Dividends and miscellaneous interest	3,046,484.33	.....
.....	45,380.49	Miscellaneous income	76,802.02	.....
.....	$ 3,525,098.94	Total other non-operating income	$ 3,712,492.36	.....
.....	$ 31,481,163.32	Gross income	$ 39,070,455.18	.....
		OTHER DEDUCTIONS FROM GROSS INCOME		
.....	$ 224,590.62	Miscellaneous rents	$ 219,026.65	.....
.....	9,084,635.00	Interest on funded debt	9,084,635.00	.....
.....	46,807.21	Interest on unfunded debt	44,984.24	.....
.....	145,271.04	Amortization of discount on funded debt	145,271.02	.....
.....	$ 9,501,303.87	Total other deductions from gross income	$ 9,493,916.91	.....
.....	$ 21,979,859.45	Net income	$ 29,576,538.27	.....
		DISPOSITION OF NET INCOME		
.....	$ 17,083,870.00	Dividends	$ 17,083,850.00	.....
.....	$ 4,895,989.45	Income balance transferred to profit and loss	$ 12,492,688.27	.....

General Operations

REVENUES:

Total Operating Revenues for 1930		$141,379,422	
Total Operating Revenues for 1929		162,409,925	
Decrease		$ 21,030,503	12.95%
The decrease resulted from the following causes:			
Freight	Decreased	$15,620,716	12.32%
Passenger	Decreased	3,457,787	18.37%
Mail	Decreased	36,013	.75%
Express	Decreased	933,344	21.04%
Other Transportation Revenues	Decreased	554,299	13.33%
Demurrage	Decreased	94,031	28.15%
Other Incidental Operating Revenues	Decreased	334,313	10.73%
Total Decrease		$21,030,503	12.95%

FREIGHT:

Due to a nationwide business depression and a further development of competitive service, with but few exceptions the tonnage of all commodities decreased. Tons carried decreased 10.93% and ton miles decreased 11.79%, resulting in a decrease in the freight revenue of $15,620,716, or 12.32%.

A comparison of tonnage by commodities 1930 with 1929 shows:

Tons carried in 1930		41,701,447	
Tons carried in 1929		46,819,641	
Decrease		5,118,194	10.93%
		Tons	
Products of Agriculture	Decreased	83,787	.94%
Animals and Products	Decreased	271,170	10.62%
Products of Mines	Decreased	2,403,446	11.56%
Products of Forests	Decreased	718,399	31.06%
Manufactures and Miscellaneous	Decreased	1,349,152	12.63%
Less Carload Tonnage	Decreased	292,240	18.80%
Total Tonnage	Decreased	5,118,194	10.93%

A comparison of carloads shows:

Total cars (all commodities) in 1930		1,285,504	
Total cars (all commodities) in 1929		1,468,784	
Decrease		183,280	12.48%

While drought conditions existed throughout various sections of the country, our territory was not seriously affected. The decrease of 0.94% in the total tonnage of products of agriculture was less than the decrease shown for any other group of commodities as classified. The grain tonnage was considered normal. The total tonnage of products of agriculture was affected principally by a lighter movement of fruits and vegetables.

Compared with 1929, which was one of the lightest movements in years, animals and products decreased 10.62%. The total receipts of live stock at the eight important markets served by the company were practically the same as last year, but more than 11,000,000 head were brought in by truck, as compared with 9,400,000 last year. The trucking of live stock continues to increase at an alarming rate. 22% of the total receipts of live stock at the markets referred to were brought in by trucks. The fluctuations in animal products reflected general business conditions.

Products of mines decreased 11.56%. Contributing factors to this decrease were a decline in the consumption of these products, due to mild weather, general business conditions, and the loss of tonnage to trucks, and the increase in the use of natural gas and oil. Bituminous tonnage originated on our line decreased 13.91%. Receipts from connections decreased 8.24%, resulting in a total decrease in bituminous tonnage of 12.43%. Seventy-three per cent of the total tonnage handled originated on line and of that 60% went to system points. Ninety-five per cent of the tonnage received from connections went to system points.

Building operations during the past year were curtailed to a greater extent than any other activity, with the result that the tonnage of products of forests decreased 31.06%.

The movement of manufactured products decreased 12.63%. With two exceptions every item classified under this heading showed a decrease. The movement of automobiles decreased 13,102 carloads, or 52.96%, due to smaller production of cars and also to an increase in the number of cars driven and trucked from the factory. Construction materials classified under this heading contributed largely to the decrease. While general business conditions and the increased use of trucks were important factors contributing to the decrease in tonnage of manufactured products, consideration should be given to the fact that the 1929 tonnage of manufactured products was the largest in the history of the railroad.

PASSENGER:

Increased highway competition and the general business depression that obtained throughout the year account for the decrease in passenger revenue.

The revenue from Chicago suburban traffic decreased 7.92%. The decrease in this traffic was due principally to the lesser number of people employed in the Chicago area. Suburban train miles decreased 0.7%. Exclusive of suburban traffic there were carried 1,474,038 less revenue passengers than in 1929, a decrease of 27.89%, and the passenger revenue miles decreased 104,812,000 or 18.17%; these figures indicating that our long haul traffic was affected to a lesser extent than the short haul.

Low rate summer tourist traffic is constituting a larger proportion of our total traffic each year, but the tendency to establish excursion rates for holidays and special occasions has resulted in a decrease in the average revenue per passenger mile from 3.013 cents in 1929 to 2.969 in 1930.

Passenger train miles decreased 560,518, 3.09%. This was

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brought about largely by reductions in local train service, by coordination of bus and rail service with the Burlington Transportation Company, and by readjustment of the through North Coast service on the Chicago-St. Paul line.

This was the sixth year for Burlington Escorted Tours, operated jointly with the Great Northern and Northern Pacific, and we handled 3,036 people, a decrease of 1,068, or 26.02% below last year.

Revenue received for the transportation of United States mails decreased about $36,000, less than 1%.

DEMURRAGE:

Demurrage assessed shows a heavy decrease, this being due to the decline in traffic handled. There was assessed $239,998 in 1930, compared with $334,029 in 1929, a decrease of $94,031.

EQUIPMENT RENTS:

Equipment rents show a decreased debit under 1929—the net debit is less than for any year for the past eight years.

Net freight car per diem credit was the largest in the past eight years. This showing was made possible by more prompt handling of cars, cars of foreign lines being returned more promptly than ever before.

In 1930 there were loaded on the line 835,471 carloads, exclusive of less than carload shipments,—a decrease of 102,817 carloads.

There were received from connecting lines 450,033 carloads, not including less than carload shipments,—a decrease of 80,463 carloads.

While the July movement of grain was heavier than in past years the decline in other business made it possible to handle the peak requirements without resorting to the use of foreign line cars to any considerable extent.

Operating Statistics

Tons of revenue freight carried, 1930	41,701,447	
Tons of revenue freight carried, 1929	46,819,641	
Decrease	5,118,194	10.93%
Revenue tons one mile, 1930	11,356,358,912	
Revenue tons one mile, 1929	12,873,521,492	
Decrease	1,517,162,580	11.79%
Revenue tons per train mile, 1930	717.26	
Revenue tons per train mile, 1929	723.93	
Decrease	6.67	.92%
Revenue tons per loaded car, 1930	23.44	
Revenue tons per loaded car, 1929	23.10	
Increase	.34	1.47%
Average revenue per ton mile (cents), 1930	.979	
Average revenue per ton mile (cents), 1929	.985	
Decrease	.006	.61%
Average distance hauled per revenue ton (miles), 1930	272.33	
Average distance hauled per revenue ton (miles), 1929	274.96	
Decrease	2.63	.96%
Revenue passengers carried, 1930	11,920,934	
Revenue passengers carried, 1929	13,848,078	
Decrease	1,927,144	13.92%
Revenue passengers carried one mile, 1930	606,612,275	
Revenue passengers carried one mile, 1929	719,016,996	
Decrease	112,404,721	15.63%
Average distance carried revenue passengers, 1930	50.89	
Average distance carried revenue passengers, 1929	51.92	
Decrease	1.03	1.98%

Expenditures (Operating)

Total Operating Expenses, 1930	$98,877,813.48	
Total Operating Expenses, 1929	111,565,542.47	
Decrease	$12,687,728.99	11.37%

In bringing about the decrease of $12,687,728.99 or 11.37% in Operating Expenses, temporary reductions of expenses, such as supervisory and clerical forces, were made, as well as consolidations of operations and work and other measures which would not result in deterioration of the property.

Maintenance of Way Expenses decreased $4,102,964.44 or 16.81%. By confining the reduced forces to the most important and necessary work and because of an ample supply of the best of native labor, it was possible with the reduced wear on track and good weather conditions, to bring about a satisfactory result in general conditions at the end of the season.

Total Transportation Expenses decreased $5,160,233.22, or 9.91% under the relatively low level prevailing in 1929. The largest factor was a decrease of $1,178,434.63 or 13.60% in locomotive fuel, due to decreased issues (which reflect a vigorous conservation campaign) and to lower price levels. It was also possible to take off passenger trains, partly due to installation of bus lines, as well as substitution of passenger motor cars for steam trains, and, by use of new freight power, to make consolidations of time freight trains.

Maintenance of Equipment Expenses decreased $3,527,477.88 or 13.52%. While there were substantial decreases made in both locomotive and car departments to meet the decreased use of locomotives and cars, a reasonable program of heavy car repairs was continued and a substantial portion of the reduction was made by consolidations of clerical and other forces.

Expenditures (Capital)

Total expenditures chargeable to Capital Account were as follows:

For Road	$5,826,812.70
For Equipment	1,381,787.47
For General	Cr. 38,881.92
Total	$7,169,718.25

No new lines were constructed. In accordance with established policy, expenditures were directed primarily towards securing increased safety and economy of operation and increased capacity for service.

Burlington Transportation Company

During the year considerable progress was made by this company in expanding its highway operations. Schedules covering 1,024 miles of highway in Burlington territory are now in operation over which 161,300 bus miles per month are run.

Effective July 1, 1930, an agreement between Burlington and Union Pacific was effected whereby the motor subsidiaries of the respective companies reduced the service between Omaha and Lincoln from eight round trips per day each to four per day each. As a result of this arrangement this operation was put on a profitable basis as compared with a substantial loss previously.

Careful study of operations is constantly being made and where experience indicates there is insufficient business to support highway service, and no opportunity to coordinate rail service that will effect a saving to the Railroad Company, operations are discontinued. As a result of this policy we have been successful in reducing the deficit per bus mile from 8c as of December 31, 1929, to 4c as of December 31, 1930, and had it not been for the current business depression it is felt the loss would have been quite small. Offsetting the deficit from highway operations, however, is the saving effected by the Railroad Company through coordination of bus service with rail service which has resulted in a reduction in rail operating expenses of $117,163 per annum. Could this saving be credited in the Transportation Co. accounts, its operations would have shown a profit of $21,839 for the year. A portion of the Transportation Company's deficit is caused by the operation of unprofitable bus service to permit the Railroad Company to discontinue unprofitable train service and effect savings in its operation in excess of the loss incurred by the Transportation Company.

Relief Department

The Relief Department was established June 1, 1889; appreciation of the opportunity of securing disability and death protection is evidenced by the increasing number of employes who are members of the Relief Department—76% of our 35,540 employees at Dec. 31, 1930, were members; this is the highest percentage yet attained, and represents almost all of the permanent force. The operations of the Department for 1930 and for the 41½ years since its establishment are given below:

RECEIPTS

	1930	To Dec. 31, 1930
Members contributions	$735,677.98	$20,504,867.56
Interest (paid by R. R. Co. on monthly balance)	11,761.34	130,566.75
Income from investments	46,475.00	684,922.11
Profit from investments	.....	28,604.17
Miscellaneous receipts	.....	44,648.01
Total Receipts	$793,914.32	$21,393,608.60

DISBURSEMENTS

Account death from sickness	$273,986.75	$ 5,354,326.00
Account death from accident	37,300.00	1,997,805.68
Account disability from sickness	165,955.27	5,288,745.87
Account disability from accident	93,684.80	5,649,843.51
Account surgical attendance, etc.	69,061.98	1,822,220.81
Total Benefits Paid	$639,988.80	$20,112,941.87
Excess of receipts over disbursements	$153,925.52	$ 1,280,666.73
Investments	.....	915,106.81
Cash on hand	.....	$ 365,559.92

The Directors take pleasure in commending the officers and employes of the Company for their competent and effective work, and their loyal cooperation during the year.

By order of the Board of Directors.

FREDERICK E. WILLIAMSON,
President.

[ADVERTISEMENT]

Thirty-fourth Annual Report of the Northern Pacific Railway Company

Office of the
NORTHERN PACIFIC RAILWAY COMPANY,
St. Paul, Minnesota, April 17, 1931.

To the Stockholders of the
Northern Pacific Railway Company:

The following, being the thirty-fourth annual report, shows the result of the operation of your property for the year ended December 31, 1930.

Income Account

	1930	1929	Increase—I Decrease—D	
Average mileage operated..	6,789.22	6,789.52	D	.30
Operating Income.				
Operating revenues.....	$80,642,412.37	$96,522,348.22	D	$15,879,935.85
Operating expenses.....	62,734,420.23	70,551,664.61	D	7,817,244.38
Net operating revenue	17,907,992.14	25,970,683.61	D	8,062,691.47
Railway tax accruals.....	7,480,777.83	9,210,938.51	D	1,730,160.68
Uncollectible railway revenues	18,396.19	20,739.09	D	2,342.90
Railway operating income	10,408,818.12	16,739,006.01	D	6,330,187.89
Equipment rents—net.....	1,421,760.48	2,297,562.79	D	875,802.31
Joint facility rent—net....	2,462,634.66	2,373,775.29	I	88,859.37
Net railway operating income	14,293,213.26	21,410,344.09	D	7,117,130.83
Nonoperating Income.				
Income from lease of road.	338,476.51	333,349.58	I	5,126.93
Miscellaneous rent income.	509,730.35	558,358.94	D	48,628.59
Miscellaneous nonoperating physical property.....	178,909.28	229,616.24	D	50,706.96
Dividend income	16,319,187.14	12,833,745.15	I	3,485,441.99
Income from funded securities	248,471.13	808,502.25	D	560,031.12
Income from unfunded securities and accounts...	378,780.61	710,081.05	D	331,300.44
Miscellaneous income	11,313.48	11,015.90	I	297.58
Total nonoperating income	17,984,868.50	15,484,669.11	I	2,500,199.39
Gross income	32,278,081.76	36,895,013.20	D	4,616,931.44
Deductions from Gross Income. (exclusive of fixed charges)				
Miscellaneous tax accruals	89,525.77	128,908.33	D	39,382.56
Miscellaneous income charges	207,375.89	209,410.05	D	2,034.16
Total of above deductions	296,901.66	338,318.38	D	41,416.72
Amount available for fixed charges and other corporate purposes	31,981,180.10	36,556,694.82	D	4,575,514.72
Fixed Charges.				
leased roads.....	51,418.85	51,470.65	D	51.80
Miscellaneous rents	83,586.04	84,441.02	D	854.98
Interest on funded debt...	14,500,227.32	14,569,073.55	D	68,846.23
Interest on unfunded debt.	89,270.45	13,680.75	I	75,589.70
Amortization of discount on funded debt	27,961.63	29,720.37	D	1,758.74
Total fixed charges....	14,752,464.29	14,748,386.34	I	4,077.95
Net income	17,228,715.81	21,808,308.48	D	4,579,592.67
Dividend requirements.....	12,400,000.00	12,400,000.00		.....
Balance for the year..	4,828,715.81	9,408,308.48	D	4,579,592.67

Earnings

Freight Business

Freight revenue was $65,135,270.47, a decrease of $11,726,871.76, or 15.26 per cent.

The number of tons of revenue freight carried was 19,685,492, a decrease of 3,472,210, or 14.99 per cent.

5,420,866,297 tons of revenue freight were moved one mile, a decrease of 1,173,622,528 tons one mile, or 17.80 per cent.

The average revenue per ton mile increased, by reason of changes in traffic movement, from 1.166 cents to 1.202 cents.

The revenue train load decreased from 670.85 to 643.68 tons. The total train load, including company freight, decreased from 783.78 to 750.50 tons.

The number of miles run by revenue freight trains, including proportion of mixed, was 8,421,621, a decrease of 1,408,375, or 14.33 per cent.

Passenger Business

Passenger revenue was $7,727,955.13, a decrease of $2,092,963.11, or 21.31 per cent.

Mail revenue was $1,883,496.12, a decrease of $882,080.59, or 31.90 per cent. Of this decrease $813,169.60 is due to inclusion in 1929 of additional mail pay for period May 9, 1925, to July 31, 1928.

Express revenue was $1,570,964.75, a decrease of $367,854.46, or 18.97 per cent.

Sleeping car, parlor and chair car, excess baggage and miscellaneous passenger revenue was $745,571.10, a decrease of $193,107.97, or 20.57 per cent.

Total revenue from persons and property carried on passenger and special trains was $11,927,987.10, a decrease of $3,536,006.13, or 22.87 per cent. Of this decrease $813,169.60 is due to inclusion in 1929 of additional mail pay for period May 9, 1925, to July 31, 1928.

The number of revenue passengers carried was 1,396,553, a decrease of 536,157, or 27.74 per cent. The number of revenue passengers carried one mile was 257,074,433, a decrease of 65,022,286, or 20.19 per cent.

The average revenue per passenger mile decreased, by reason of changes in traffic movement, from 3.049 to 3.006 cents.

Maintenance of Equipment

The charges for maintenance of equipment were $17,053,768.73, a decrease of $1,701,336.13, or 9.07 per cent. Of the total charges $4,297,708.38 represents depreciation, accrued at the rate of 4 per cent.

Locomotives

Total number of locomotives on active list, December 31, 1929		1,087
Additions		
Locomotives purchased		11
		1,098
Deductions:		
Locomotives sold	2	
Locomotives withdrawn from service, to be dismantled..	46	48
Total locomotives on active list, December 31, 1930		1,050
In addition to locomotives on active list there were:		
Withdrawn from service and on hand December 31, 1929	16	
Withdrawn from service during the year.....	46	62
Less—Dismantled		61
Leaving on hand locomotives withdrawn from service which may be sold or dismantled.....		1

Hauling Capacity

	Number	Tractive power (Pounds)	Total weight on drivers (Pounds)	Total weight of locomotives (Pounds)
Assignment December 31, 1929	1,087	46,984,160	203,082,367	262,665,852
Added during year—purchased	11	1,540,000	6,147,900	7,957,400
Added during year *.....	....	11,710	79,900	133,500
Total	1,098	48,535,870	209,310,167	270,756,752
Locomotives sold or withdrawn from service	48	1,592,600	7,223,440	9,289,220
Total December 31, 1930...	1,050	46,943,270	202,086,727	261,467,532

* Account engines having superheaters, boosters, feedwater heaters, thermic syphons and stokers applied; changes in size of cylinders and steam pressure increased.

EARNINGS AND EXPENSES PER MILE OPERATED

	1917	1926	1927	1928	1929	1930
Operating revenues per mile.....	$13,526.37	$14,568.38	$14,329.17	$15,048.31	$14,216.37	$11,878.01
Operating expenses per mile.....	8,171.39	10,215.11	10,173.20	10,520.60	10,391.26	9,240.30
Net operating revenue per mile.....	5,354.98	4,353.27	4,155.97	4,527.71	3,825.11	2,637.71
Taxes per mile	1,059.52	1,369.45	1,335.41	1,439.59	1,356.64	1,101.86
Net after taxes	4,295.46	2,983.82	2,820.56	3,088.12	2,468.47	1,535.85

RATIOS

	1917	1926	1927	1928	1929	1930
Operating expenses to operating revenues.....	60.41%	70.12%	71.00%	69.91%	73.09%	77.79%
Transportation expenses to operating revenues....	32.34%	33.17%	33.38%	32.41%	33.51%	35.45%
Taxes to operating revenues	7.83%	9.40%	9.32%	9.57%	9.54%	9.28%

The following statement shows the character and condition of the locomotives of the Company on December 31, 1930.

Condition	December 31, 1930 Number	Per cent	December 31, 1929 Number	Per cent
Good	886	84.38	917	84.36
Fair	46	4.38	67	6.16
At shops or awaiting shop	89	8.48	80	7.36
Unserviceable, awaiting disposition	29	2.76	23	2.12
	1,050	100.00	1,087	100.00
Number of oil burning locomotives	24	2.29	23	2.12
Number of locomotives equipped with superheaters	815	77.62	819	75.34
Number of locomotives equipped with stokers	295	28.10	282	25.94
Number of locomotives equipped with boosters	55	5.24	44	4.05

The eleven four cylinder simple Mallet locomotives of the Yellowstone type, purchase of which was referred to in last year's report, have been received and placed in service.

Freight Car Situation on December 31st

	1930	1929	Increase—I Decrease—D	
Northern Pacific cars on line	43,287	40,940	I	2,347
Foreign cars on line	5,252	5,981	D	729
Total cars on line	48,539	46,921	I	1,618
Northern Pacific cars on foreign lines	6,708	9,452	D	2,744
Number of cars unserviceable	3,875	3,305	I	570
Percentage of unserviceable to total cars on line	7.98	7.04	I	.94
Number of cars requiring heavy repairs	2,534	1,994	I	540
Percentage of above to total cars on line	5.22	4.25	I	.97
Number of cars requiring light repairs	1,341	1,311	I	30
Percentage of above to total cars on line	2.75	2.79	D	.03

Maintenance of Way and Structures

The charges for maintenance of way and structures were $9,884,413.27, a decrease of $2,319,137.91, or 19.00 per cent.

The following statements give particulars of some of the work done.

Permanent Way

	Year 1930	Year 1929
New main line laid with 90 pound rail, second hand—miles	.05	.....
New second and third track laid with 100 pound rail—miles	.56	.....
New second and third track laid with 90 pound rail, second hand—miles	.01	.....
New branch lines laid with 90 pound rail, second hand—miles	.....	.69
New branch lines laid with 85 pound rail, second hand—miles	.05	.....
Main line relaid with 130 pound rail—miles	4.20	4.56
Main line relaid with 100 pound rail—miles	98.78	108.19
Main line relaid with 90 pound rail, second hand, miles	.....	21.73
Second track relaid with 130 pound rail—miles	.32	.31
Second track relaid with 100 pound rail—miles	6.13	2.24
Second track relaid with 90 pound rail—miles	.07	.16
Branch lines relaid with 100 pound rail—miles	.02	.02
Branch lines relaid with 90 pound rail, second hand—miles	9.58	9.63
Branch lines relaid with 85 pound rail, second hand—miles	.....	10.57
Sidings and spurs constructed—miles	60.82	39.56
Track ballasted with washed gravel—miles	40.53	141.65
Track ballasted with washed gravel—Cubic yards	138,309	411,224
Track ballasted with bank-run gravel—miles	8.94	78.68
Track ballasted with bank-run gravel—Cubic yards	24,674	163,720
Track ballasted with bank-run gravel (patch or repairs)—Cubic yards	23,715	23,467
Embankments widened—miles	13.11	99.04
Embankments widened—Cubic yards	49,257	245,270
Cross, bridge and switch tie renewals, main line—ties	726,580	981,610
Cross, bridge and switch tie renewals, branch lines—ties	505,352	651,110
Timber bridges replaced by permanent structures and embankments	51	58
Equal to—miles	1.22	1.81
Timber bridges renewed	34	37
Timber culverts renewed	9	7
Timber culverts replaced in permanent form	141	120
New stock fences constructed—miles	36.13	34.97
New snow fences constructed—miles	1.33	.46

Rail in Main, Second, Third and Fourth Tracks

Weight	Main line Miles	Branches Miles	Second, third and fourth track Miles	Total miles Dec. 31, 1930	Total miles Dec. 31, 1929
130 pound steel	66.13	.....	9.58	75.71	72.12
100 pound steel	980.40	1.28	70.82	1,052.50	949.88
90 pound steel	1,590.93	590.84	514.95	2,696.72	2,773.71
85 pound steel	216.94	778.48	26.98	1,022.40	1,041.29
80 pound steel	1.24	5.90	.44	7.58	1.68
72 pound steel	69.44	1,044.61	8.10	1,122.15	1,121.48
70 pound steel	.....	48.23	.....	48.23	48.23
66 and 67 pound steel	19.97	377.78	.99	398.74	398.73
60 pound steel	2.47	16.76	.....	19.23	24.63
56 pound steel	.87	692.69	.16	693.72	703.17
Total	2,948.39	3,556.57	632.02	7,136.98	7,134.92

Bridges

96 bridges were replaced, 34 of which, 4,320 linear feet in length, were replaced by timber, and 11 permanent and 51 timber structures were replaced in permanent form, as follows:

Replaced by embankment	36 bridges,	5,400 linear feet
Replaced by steel girders, I-beams, and reinforced concrete trestle	26 bridges,	2,369 linear feet
Total	62 bridges,	7,769 linear feet

In addition to changes referred to above, 7 permanent and 14 temporary bridges were added, 150 culverts were rebuilt, 9 in temporary and 141 in permanent form. Twenty-four I-beam bridges, with a total of 1,290 linear feet, were reinforced with additional I-beams to carry standard loading.

Bridges as they existed December 31, 1930.

Description	Number	Linear feet	Miles
Steel, iron, stone and concrete permanent bridges	945	161,583	30.60
Timber, and combination iron and timber structures	2,325	333,748	63.21
Total	3,270	495,331	93.81

Total length of timber structures replaced by steel bridges, embankments, or other permanent form, from July 1, 1885, when work was commenced, to December 31, 1930, 156.80 miles.

Buildings

New buildings and structures or increased facilties have been provided at the following stations:

Wisconsin: Superior.

Minnesota: Becker, Brainerd, Buffington, Crookston, Detroit Lakes, Dilworth, Duluth, Little Falls, Northtown, Red Lake Falls, St. Cloud, St. Paul, Sherack, Staples, Underwood, and Wrenshall.

North Dakota: Bismarck, Carson, Cleveland, Dickinson, Esmond, Fargo, Gladstone, Grand Forks, Halliday, Hebron, Jamestown, Joliette, Lehigh, Lisbon, Medina, Minnewaukan, Sterling, Sweet Briar, Valley City, and Wilton.

Montana: Alder, Anceney, Belgrade, Billings, Catron, Circle, Columbus, Glendive, Laurel, Livingston, Miles City, Red Lodge, Rosebud, and Three Forks.

Idaho: Lewiston.

Washington: Copalis, Ellensburg, Haybow, Kent, Puyallup, Sawyer, Seattle, South Tacoma, Sumner, Tacoma, Thorp, and Toppenish.

Water Supply

Water treating plants were installed at Third Street, St. Paul, Minnesota; Cheney, Lind, and Ritzville, Washington.

Water treating plants, mentioned in last report as under construction at Sterling, North Dakota; Dowlin, Glendive, Intake, and Sidney, Montana; have been completed and are in service.

Improvements were made in water stations at Big Lake, Hinckley, Klondyke, Motley, and St. Cloud, Minnesota; Beach Glenullen, Hebron, Jamestown, Pembina, and Sterling, North Dakota; Blum, and Glendive, Montana; Kalama, Lamar, Olympia, and Seattle, Washington.

Fuel Stations

Equipment for fueling gas-electric motor cars consisting of 12,000 gallon tank, pumping equipment, etc., has been provided at Brainerd, Minnesota.

New coal docks have been provided at Paradise, Montana, 500 ton capacity, steel construction, and at Arlington, Washington, 100 ton capacity, frame construction.

Improvements have been made in coal docks at Duluth, Minnesota; Bearmouth, Billings, Bozeman, East Butte, Forsyth, Garrison, Laurel, Logan, Townsend, Trout Creek, Rivulet, and Whitehall, Montana; Bromart, Cle Elum, Hoquiam, Lester, and Seattle, Washington.

Block Signals and Interlockers

An automatic electric switch machine has been placed at end of double track, West Duluth, Minnesota.

The east end of yard at Mississippi Street, St. Paul, Minnesota, has been interlocked and is being operated as part of the existing interlocking plant.

A switch machine has been installed at Gregory, Minnesota, for automatic electric operation of switch at end of double track, to replace manual operation.

Three-position color light automatic block signals have been placed in service at Spokane, Washington, westward from O. W. R. R. & N. Co. crossing, 1.6 miles of double track. Similar signals, mentioned in last report as being installed between Tacoma and Tenino, Washington, 43.8 miles of double track, have been placed in service.

On five miles of double track between St. Paul and Minneapolis, Minnesota, the semaphore type automatic block signals have been replaced by three-position color light type of signals, completing the change in type of signals between these cities.

The lighting of automatic block signals has been changed from oil lamps to approach lighting electric lamps between

[Advertisement]

Staples and Barnes Spur, Minnesota; Billings and Livingston, Missoula and St. Regis, and St. Regis and Paradise, Montana; Pasco and Ellensburg, Seattle and Tacoma (Reservation), and Tacoma and South Tacoma, Washington.

The interlocking plant at Dryad, Washington, has been converted from manual to automatic operation.

Separation of Grades

At Superior, Wisconsin, the viaduct to carry 21st Street over tracks, mentioned in last report, was completed.

At St. Paul, Minnesota, the viaduct carrying Third Street over tracks was rebuilt with steel and concrete, at joint cost to Ramsey County, City of St. Paul, Northern Pacific Railway Company, and other railroads whose tracks are spanned.

At Butte, Montana, the bridge carrying tracks over Harrison Avenue, was rebuilt. Center pier was removed and long steel span was placed to provide clear opening for street.

At Mile Post 6, near Butte, Montana, a reinforced concrete bridge was constructed to carry State Highway over tracks.

At Mile Post 51, west of Craver, Montana, a steel and concrete bridge was constructed to carry the Yellowstone Trail over tracks.

At Wibaux, Montana, a steel and concrete bridge was constructed to carry tracks over Wibaux Street, to replace wooden bridge which was washed out during high water in year 1929.

At Keith, Washington, a reinforced concrete bridge was constructed to carry Princeton Avenue over tracks.

At Kiona, Washington, a reinforced concrete bridge was constructed to carry tracks over State Highway No. 3.

At Seattle, Washington, a steel and concrete bridge was constructed to carry West Garfield Street over tracks, to replace wooden bridge constructed in year 1910.

Miscellaneous

Following the washouts of June, 1929, west of Medora, North Dakota, on the Yellowstone Division, a number of channel changes were made, culverts enlarged, new bridges constructed and riprap placed. This work was completed during 1930.

At Easton and Lester, Washington, electric wiring was provided for lighting and power for all company buildings and facilities.

At Seattle, Washington, a third story, brick construction, cold storage room, electric elevator, and other facilities were added to the Produce Building.

At Seattle, Washington, filling of Blocks 307, 308, and 358, Seattle Tide Lands, recently acquired for industrial sites, was done by hydraulic dredging and a total of 575,885 cubic yards of material placed.

General

Financial Results of Operation.

The Net Railway Operating Income of the Company in 1930 was $14,293,213.26, a decrease of $7,117,130.83, or 33.24% under 1929. The Net Income of the Company in 1930, after paying all charges, was $17,228,715.81, a decrease of $4,579,592.67, or 21.00% under 1929. Included in the Net Income for 1930 is a liquidating dividend of $2,833,832, received from the Northern Express Company, a wholly owned subsidiary, and an extra dividend of $4,150,895, received from the Burlington Railroad.

Due to the general depression in business during the year, the Operating Revenues of the Company decreased $15,879,936, or 16.45%, compared with 1929. There was included in 1929, $813,170 account of additional mail pay for period of May 9, 1925 to July 31, 1928. Operating Expenses decreased $7,817,245, or 11.08%.

Return on Property Investment.

Year ended December 31,	Railway Property Investment including Material and Supplies and Working Cash at end of Year	Net Railway Operating Income	Return on Investment Per Cent
1921	$559,236,547	$10,843,826	1.939
1922	557,966,448	19,450,515	3.486
1923	581,455,528	17,100,557	2.941
1924	586,395,122	19,861,077	3.387
1925	596,316,581	22,227,319	3.727
1926	608,490,106	24,213,700	3.979
1927	617,172,925	22,592,837	3.661
1928	624,378,240	25,088,572	4.018
1929	632,230,551	21,410,344	3.386
1930	636,501,129	14,293,213	2.246

The progress of the investigation by the Interstate Commerce Commission of the class rates in western trunk line territory has been indicated in previous reports. During the year the Commission announced its decision in which it held that the carriers were in need of additional revenues and that class rate traffic in western trunk line territory should pay higher rates. The revision of these rates, which the Commission directed, while authorizing increases, also carried substantial reductions in the overhead class rates between the East and the Middle West, and it is doubtful whether the new basis of class rates prescribed by the Commission will yield this Company, or the carriers generally, any additional revenue. A petition seeking a modification of the reductions required in the overhead class rates has been filed with the Commission by all of the interested carriers, and is still pending. The new class rates have not yet been made effective and cannot be made effective before July 1, 1931, due to the large amount of work necessary to revise the tariffs.

The Commission also announced its decision with respect to rates on grain and grain products in the western district. In that decision the carriers are directed to make very substantial reductions in the rates on grain and grain products, in the interests of farm relief. The decision is based upon a finding that in view of increases granted in the class rates case, the readjustment prescribed will not threaten the maintenance of an adequate national system of transportation. It is estimated that the reductions required will cost the carriers in the western district in the aggregate more than eighteen million dollars a year. The revenue loss to this Company alone would approximate between $600,000 and $800,000 a year. Due to the immense amount of work involved in the preparation of the tariffs necessary to make the prescribed rate adjustment effective, however, the Commission has from time to time postponed the effective date of its order, and it now appears that the reduced rates on grain and grain products cannot be established before June 1, 1931. In view of the relatively poor earnings of the carriers generally during the past year, efforts have been and are being made to induce the Commission to set aside its order in the grain case and to reopen it for further hearing.

Land Department.

During the year 112,277.44 acres were sold as compared with 249,492.31 acres sold in 1929, a decrease of 55%. The total of land, town lot, timber, and miscellaneous sales in 1930 amounted to $1,484,628.62, as compared with $2,246,935.32 in 1929, a decrease of 33.9%. The market for all classes of land was greatly depressed throughout the year, the timber industry and the various branches of agriculture being affected to a marked degree by the adverse business conditions generally prevailing. Contract cancellations during the year amounted to 76,899.88 acres, representing $381,456.30, as compared with 49,016.98 acres, representing $211,026.90 cancelled in 1929, an increase of 56.9% in acres, and 80.8% in amount.

The outstanding deferred payments on land contracts on December 31, 1930, amounted to $4,673,610.72, as compared with $5,051,620.02 on December 31, 1929, a decrease of 7.5%.

The net cash receipts for the year amounted to $431,329.65, as compared with $621,017.86 in 1929, a decrease of 30.5%. This is largely caused by fewer down payments as the result of the falling off in sales of lands and timber, and slower collections of deferred payments and interest on outstanding contracts, but receipts from cultivation leases and coal mining leases were also much below similar receipts in 1929. On the other hand, receipts from iron ore leases amounted to $450,-121.79, as compared with $241,015.42 in 1929, and the receipts from oil and gas leases amounted to $42,847.98, as compared with $22,761.10 in 1929.

The equity suit involving the land grants of the Company, authorized by Act of Congress June 25, 1929, was begun in the District Court of the United States, at Spokane, by the filing of a bill on July 31, 1930. Issue has been joined, but the case has not yet been tried.

Taxes.

The following statement shows taxes accrued each year during the past four years:

	1927	1928	1929	1930
State taxes	$7,657,980	$8,199,054	$8,189,577	$7,575,471
Federal taxes	1,207,638	1,449,562	980,722	*136,417*
Canadian and miscellaneous taxes	41,505	39,557	40,639	41,724
Total	$8,907,123	$9,688,173	$9,210,938	$7,480,778

Comparative Statement of Payrolls and Employees.

A comparison of payrolls and number of employees for a period of years ended December 31, follows:

	Payrolls	Number of Employees
1921	$50,643,526	28,911
1922	49,041,401	27,899
1923	51,921,572	31,344
1924	45,950,886	27,133
1925	46,188,348	26,831
1926	44,938,046	26,111
1927	44,952,702	25,728
1928	46,261,766	25,841
1929	45,962,423	25,403
1930	40,723,725	22,809

[Advertisement]

Security Owners.

There are now 36,394 owners of stock and about 30,000 owners of bonds of the Company.

As showing the diversity of holdings, the following figures are given:

18,298 hold from 1 to 19 shares;
12,369 hold from 20 to 99 shares;

30,667 or 84.26% hold less than 100 shares each;
5,727 hold 100 or more shares.

Total 36,394

Of the above stockholders 15,602 are women;
2,870 are savings banks, insurance companies, trustees, guardians, colleges, and charitable institutions.

Improvement in Equipment.

On December 31, 1930, the Company had 49,995 freight cars with a total capacity of 2,049,905 tons, and an average capacity of 41.00 tons. The following tabulation shows a comparison of freight car construction:

	March 1, 1920	Dec. 31, 1930
Cars new or rebuilt since March 1, 1920	.....	41,572
Cars with steel center sills	18,860	23,106
Cars with steel underframes	3,773	14,590
Cars all steel construction	3,795	4,681
Cars with metal roofs	19,094	31,484
Cars with steel ends	.....	6,471

All classes of equipment, including locomotives, have been adequately maintained and are in good condition. Eight hundred and fifteen locomotives are equipped with superheaters, and two hundred and ninety-five are equipped with mechanical stokers. The total tractive power of locomotives on December 31, 1930, was 46,943,270 pounds, an average of 44,708 pounds.

An extensive program for rebuilding freight equipment at company shops at various points on the line is in progress, which calls for dismantling of three thousand of older type of refrigerator, box, and gondola cars, and construction of one thousand refrigerator cars, one thousand 80M capacity box cars, five hundred 100M capacity box cars, and five hundred 40-foot stock cars.

Financial Condition.

During the past year outstanding securities amounting to $1,287,500 have been retired, reducing the funded debt from $315,424,500 to $314,137,000. The net expenditures for additions and betterments amounted to $5,496,274. During the past ten years $86,887,502 have been expended on additions and betterments to the property. In the same period, not considering the increase in debt due to the refunding of the Northern Pacific-Great Northern (C. B. & Q. Collateral) Joint 4's in 1921, the total debt outstanding in the hands of the public decreased $4,247,400. Excepting certain Equipment Trust Certificates and Branch Line Bonds totaling $6,169,000, which mature from time to time between now and the year 1968, none of the Company's funded debt will mature before 1996, and the larger part of it will not mature until 2047.

Pension Department.

On December 31, 1930, there were on the retired list 880 employees whose average monthly allowance was $55.52. During the year 171 employees were added to the list, and 64 died. The total amount disbursed during the year was $542,800.77.

By order of the Board of Directors,
CHARLES DONNELLY,
President.

Northern Pacific Railway Company

General Balance Sheet, December 31, 1930

Assets

	1930	1929	+Increase or —Decrease
INVESTMENTS			
ROAD AND EQUIPMENT.			
Road	$480,141,818.87	$476,684,814.68	+$3,457,004.19
Equipment	125,291,381.99	123,237,077.33	+ 2,054,304.66
General	4,067,543.73	4,095,726.43	— 28,182.70
	609,500,744.59	604,017,618.44	+ 5,483,126.15
DEPOSITS IN LIEU OF MORTGAGED PROPERTY SOLD (Net moneys in hands of Trustees from sale of land grant lands, etc.)	309,670.88	657,679.93	— 348,009.05
MISCELLANEOUS PHYSICAL PROPERTY	10,987,619.69	10,936,249.01	+ 51,370.68
INVESTMENTS IN AFFILIATED COMPANIES.			
Stocks	144,232,322.51	144,087,485.01	+ 144,837.50
Bonds	34,091,128.63	33,695,747.75	+ 395,380.88
Notes	2,472,761.17	2,472,761.17	.....
Advances	4,385,324.80	3,823,774.88	+ 561,549.92
	185,181,537.11	184,079,768.81	+ 1,101,768.30
OTHER INVESTMENTS.			
Stocks	8,631.00	8,631.00	.....
Bonds	1,966,629.42	1,871,551.54	+ 95,077.88
U. S. Treasury notes and certificates, etc.	2,189,814.91	2,387,068.76	— 197,253.85
Contracts for sale of land grant lands	4,673,610.72	5,051,620.02	— 378,009.30
	8,838,686.05	9,318,871.32	— 480,185.27
Total Capital Assets	814,818,258.32	809,010,187.51	+ 5,808,070.81
CURRENT ASSETS.			
Cash	15,714,011.83	15,434,625.61	+ 279,386.22
Special deposits	5,282,339.00	5,275,991.00	+ 6,348.00
Loans and bills receivable	850.00	1,920.35	— 1,070.35
Traffic and car service balances receivable	1,216,389.43	1,419,849.59	— 203,460.16
Net balances receivable from agents and conductors	710,483.43	745,067.79	— 34,584.36
Miscellaneous accounts receivable	2,795,211.69	3,157,118.39	— 361,906.70
Material and supplies	9,459,995.39	10,933,802.13	— 1,473,806.74
Interest, dividends and rents receivable	102,464.79	106,974.25	— 4,509.46
Other current assets	72,008.83	79,959.42	— 7,950.59
Total Current Assets	35,353,754.39	37,155,308.53	— 1,801,554.14
DEFERRED ASSETS.			
Working fund advances	43,400.52	44,341.34	— 940.82
Other deferred assets	85,926.77	101,056.74	— 15,129.97
Total Deferred Assets	129,327.29	145,398.08	— 16,070.79
UNADJUSTED DEBITS.			
Discount on funded debt	2,288,148.56	2,315,916.59	— 27,768.03
Other unadjusted debits	16,326,479.20	17,820,222.37	— 1,493,743.17
Total Unadjusted Debits	18,614,627.76	20,136,138.96	— 1,521,511.20
Grand Total	868,915,967.76	866,447,033.08	+ 2,468,934.68

Liabilities

	1930	1929	+Increase or —Decrease
STOCK.			
Capital stock—common	$248,000,000.00	$248,000,000.00	....
GOVERNMENTAL GRANTS.			
Grants in aid of construction	481,983.76	474,733.34	+ $7,250.42
LONG TERM DEBT.			
Funded debt	331,312,500.00	332,600,000.00	— 1,287,500.00
Less—held by or for the Company	17,175,500.00	17,175,500.00	.....
	314,137,000.00	315,424,500.00	— 1,287,500.00
Total Capital Liabilities	562,618,983.76	563,899,233.34	— 1,280,249.58
CURRENT LIABILITIES.			
Traffic and car service balances payable	517,684.74	724,898.47	— 207,213.73
Audited vouchers and wages payable	4,993,671.92	6,260,285.75	— 1,266,613.83
Miscellaneous accounts payable	382,775.01	619,835.77	— 237,060.76
Interest matured unpaid	5,285,277.00	5,278,929.00	+ 6,348.00
Unmatured dividends declared	3,100,000.00	3,100,000.00	.....
Unmatured interest accrued	346,735.41	361,351.04	— 14,615.63
Unmatured rents accrued	7,456.59	7,456.59	.....
Other current liabilities	71,219.82	72,974.50	— 1,754.68
Total Current Liabilities	14,704,820.49	16,425,731.12	— 1,720,910.63
DEFERRED LIABILITIES.			
Other deferred liabilities	76,728.12	131,232.55	— 54,504.43
Total Deferred Liabilities	76,728.12	131,232.55	— 54,504.43
UNADJUSTED CREDITS.			
Tax liability	9,595,093.65	9,969,783.90	— 374,690.25
Accrued depreciation of equipment	55,616,240.02	52,526,285.28	+ 3,089,954.74
Other unadjusted credits	14,154,681.95	15,791,644.04	— 1,636,962.09
Total Unadjusted Credits	79,366,015.62	78,287,713.22	+ 1,078,302.40
CORPORATE SURPLUS.			
Additions to property through income and surplus	1,154,505.37	949,524.66	+ 204,980.71
Funded debt retired through income and surplus	17,640,474.54	17,500,395.79	+ 140,078.75
Miscellaneous fund reserves	146,864.95	271,620.87	— 124,755.92
Total Appropriated Surplus	18,941,844.86	18,721,541.32	+ 220,303.54
Profit and loss balance	193,207,574.91	188,981,581.53	+ 4,225,993.38
Total Corporate Surplus	212,149,419.77	207,703,122.85	+ 4,446,296.92
Grand Total	868,915,967.76	866,447,033.08	+ 2,468,934.68

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Southern Pacific Company

Report of the Board of Directors

NEW YORK, N. Y., April 30, 1931.

TO THE STOCKHOLDERS OF THE SOUTHERN PACIFIC COMPANY:

Your Board of Directors submits this report of the operations and financial affairs of the Southern Pacific Lines and Affiliated Companies for the fiscal year ended December 31, 1930.

Income Account

The following statements of income and of surplus show the income for the year and the accumulated surplus to the close of the year, accruing to Southern Pacific Company stock from the Transportation System and from all *separately operated Solely Controlled Affiliated Companies,* combined:

NET INCOME OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, FOR THE YEAR 1930 COMPARED WITH THE YEAR 1929

	Year Ended December 31, 1930	+Increase —Decrease Compared with 1929 Amount	Per Cent.
Net income of Transportation System	*$30,684,103.17	—$16,750,827.04	35.31
Net income of Affiliated Companies	*†841,921.37	— 1,767,774.37	—
Net income of Transportation System and of all separately operated Solely Controlled Affiliated Companies, combined	*$29,842,181.80	—$18,518,601.41	38.29
Per cent. earned on average amount of outstanding capital stock of Southern Pacific Company:			
(a) From operations of Transportation System	8.24	— 4.50	35.31
(b) From operations of Affiliated Companies	—	— .25	—
(c) Total for the year 1930	8.01	— 4.98	38.29
(d) Total for the year 1929	12.99	—	—

* The amounts reported exclude all inter-company dividends. † Deficit.

SURPLUS OF THE SOUTHERN PACIFIC LINES AND SOLELY CONTROLLED AFFILIATED COMPANIES, COMBINED, TO DECEMBER 31, 1930

		Debit	Credit
Total corporate surplus at December 31, 1929		—	$549,736,839.56
Credit balance transferred from income:			
Transportation System	$28,962,632.42		
Affiliated Companies	*874,293.68	—	28,088,338.74
Dividends paid:			
On capital stock of Southern Pacific Company:			
1½ per cent. paid April 1, 1930	$5,585,727.00		
1½ per cent. paid July 1, 1930	5,585,727.00		
1½ per cent. paid October 1, 1930	5,585,727.00		
1½ per cent. payable January 2, 1931	5,585,727.00		
Total Southern Pacific Company	$22,342,908.00		
On capital stocks of Transportation System Companies held by the public	30.00		
On capital stocks of Solely Controlled Affiliated Companies held by the public	3,000.00	$22,345,938.00	—
Miscellaneous adjustments during the year		5,328,978.52	—
Credit balance December 31, 1930		550,150,261.78	—
		$577,825,178.30	$577,825,178.30

* Debit.

Income Account of Southern Pacific Lines

The income account of the Transportation System (Southern Pacific Company and Transportation System Companies, combined, excluding offsetting accounts and inter-company dividends) for the year 1930, compared with the year 1929, was as follows, viz:

	Year Ended December 31, 1930	+ Increase — Decrease	Per Cent.
OPERATING INCOME			
Railway operating revenues	$258,758,128.74	—$52,211,009.69	16.79
Railway operating expenses	187,644,861.44	— 32,053,541.67	14.59
Net revenue from railway operations	$71,113,267.30	—$20,157,468.02	22.09
Railway tax accruals	19,241,662.60	— 3,021,944.94	13.57
Uncollectible railway revenues	82,580.36	+ 9,590.49	13.14
Equipment rents—Net	8,480,876.41	— 489,900.21	5.46
Joint facility rents—Net	199,487.45	— 22,013.86	9.94
Net railway operating income	$43,108,660.48	—$16,633,199.50	27.84
Revenues from miscellaneous operations	$575,099.52	+ $331,596.75	136.18
Expenses of miscellaneous operations	554,158.47	+ 330,255.74	147.50
Net revenue from miscellaneous operations	$20,941.05	+ $1,341.01	6.84
Total operating income	$43,129,601.53	—$16,631,858.49	27.83
NONOPERATING INCOME			
Income from lease of road	$97,926.28	— $13,912.60	12.44
Miscellaneous rent income	1,804,512.13	+ 66,787.32	3.84
Miscellaneous nonoperating physical property	77,295.14	+ 17,794.05	29.91
Dividend income	†11,410,252.58	+ 1,712,580.48	17.66
Income from funded securities—Bonds and notes	3,385,254.81	+ 177,453.16	5.53
Income from funded securities—Investment advances	71,957.09	+ 8,334.28	13.10
Income from unfunded securities and accounts	785,708.60	— 1,005,848.27	56.14
Income from sinking and other reserve funds	976,668.74	— 110,590.98	10.17
Miscellaneous income	214,706.63	+ 119,469.46	125.44
Total nonoperating income	$18,824,282.00	+ $972,066.90	5.45
Gross income	$61,953,883.53	—$15,659,791.59	20.18
DEDUCTIONS FROM GROSS INCOME			
Rent for leased roads	$77,915.00	— $204,623.54	72.42
Miscellaneous rents	790,376.21	+ 41,497.36	5.54
Miscellaneous tax accruals	61,857.56	— 11,123.10	15.24
Separately operated properties—Loss	340,154.49	+ 36,556.02	12.04
Interest on funded debt—Bonds and notes	28,816,752.22	+ 1,264,318.74	4.59
Interest on funded debt—Nonnegotiable debt to affiliated companies	85.70	— 57,409.29	99.85
Interest on unfunded debt	374,759.14	+ 48,276.22	14.79
Amortization of discount on funded debt	331,590.30	+ 105,751.98	46.83
Maintenance of investment organization	39,052.01	+ 3,895.25	11.08
Miscellaneous income charges	437,237.73	— 136,104.19	23.74
Total deductions from gross income	$31,269,780.36	+ $1,091,035.45	3.62
Net income	$30,684,103.17	—$16,750,827.04	35.31
DISPOSITION OF NET INCOME			
Income applied to sinking and other reserve funds	$1,578,323.28	+ $86,690.31	5.81
Income appropriated for investment in physical property	143,147.47	+ 65,148.34	83.52
Total appropriations	$1,721,470.75	+ $151,838.65	9.67
Income balance transferred to credit of profit and loss	$28,962,632.42	—$16,902,665.69	36.85

† Excludes all inter-company dividends.

The net railway operating income of the Transportation System is dealt with in the report of the Chairman of the Executive Committee. The causes of the principal increases and decreases in nonoperating income, and in deductions from gross income are explained below, viz:

Nonoperating Income

The increase of $17,794.05 in the account Miscellaneous Nonoperating Physical Property is due, principally, to a decrease in the amount chargeable to this account, this year, for the difference between ledger value and salvage value of track material returned to the Company upon cancellation of the leases covering the rental of such material.

The increase of $1,712,580.48 in the account Dividend Income is due, principally, to increased dividends from the Pacific Fruit Express Company, the Pacific Greyhound Corporation, and the Southern Pacific Golden Gate Company; and to dividends received this year on stocks of the St. Louis Southwestern Railway Company and the Southland Greyhound Lines, Inc., acquired during the year; which increases were partly offset by a decrease in the dividends on stocks sold during the year.

The increase of $177,453.16 in the account Income from Funded Securities—Bonds and Notes is due, principally, to the inclusion in the account, this year, of a full year's interest on bonds of the Southern Pacific Golden Gate Ferries, Ltd., acquired last year, and to the inclusion in the account, this year, of interest on bonds of the Guatemala Central Railroad Com-

pany, which bonds were owned last year by the sinking fund for the redemption of Central Pacific Railway Company Three and One-Half Per Cent. Mortgage Bonds, but which became free assets in the treasury upon the maturity and retirement of the latter bonds.

The decrease of $1,005,848.27 in the account Income from Unfunded Securities and Accounts is due, principally, to the inclusion in that account, last year, of about $700,000 of interest on time loans and deposits, made from the proceeds of sale of the Southern Pacific Company Forty-Year 4½% Gold Bonds of 1929 and Southern Pacific Company Four and One-Half Per Cent. Equipment Trust Certificates, prior to the time such proceeds were required for current use; to the inclusion last year of about $221,000 of interest on Federal tax refunds, in excess of similar interest included in the account this year; and to interest collected last year on deferred payments in connection with the sale of securities.

The increase of $119,469.46 in the account Miscellaneous Income is due, principally, to royalties received this year on oil from wells located on the right-of-way of your Company in the Sea Cliff, California, field, no such royalties having previously been received by your Company.

Deductions from Gross Income

The decrease of $204,623.54 in the account Rent for Leased Roads is the result, principally, of including in such account, last year, rentals paid to the Inter-California Railway in California, which company is dealt with, this year, as a Transportation System Company.

Balance Sheet of Southern Pacific Lines

Southern Pacific Company and Transportation System Companies, Combined

ASSETS—DECEMBER 31, 1930, COMPARED WITH DECEMBER 31, 1929, EXCLUDING OFFSETTING ACCOUNTS

	December 31, 1930	+ Increase — Decrease
Assets		
INVESTMENTS		
Investment in road and equipment	$1,512,792,741.69	+$28,962,490.67
Improvements on leased railway property	638,556.81	+ 3,904.15
Sinking funds	19,546,325.66	— 2,300,879.31
Deposits in lieu of mortgaged property sold	791,470.06	— 2,174,967.32
Miscellaneous physical property	3,274,245.68	+ 77,655.86
Investments in affiliated companies:		
Stocks	371,131,311.41	+ 1,218,055.66
Bonds	148,471,783.75	+ 893,542.68
Stocks, Bonds } Cost inseparable	60,648,142.62	— 595,230.00
Stocks, Bonds, Advances } Cost inseparable	2,249,825.00	—
Notes	23,923,639.74	— 136,965.44
Advances	47,099,051.04	+ 1,340,755.74
Other investments:		
Stocks	11,705,514.84	+ 11,635,245.58
Bonds	5,789,067.26	+ 1,755,556.29
Notes	491,725.31	+ 42,907.86
Advances	106,930.17	+ 57,624.44
Miscellaneous	1,864,404.56	— 1,663,454.60
Total	$2,210,524,735.60	+$39,116,242.26
CURRENT ASSETS		
Cash	$22,571,739.25	— $5,787,993.03
Demand loans and deposits	1,305.00	— 1,833.33
Time drafts and deposits	7,890,000.00	+ 7,390,000.00
Special deposits	58,642.19	+ 22,292.96
Loans and bills receivable	203,418.46	— 87,971.22
Traffic and car-service balances receivable	3,064,378.96	— 5,350.22
Net balance receivable from agents and conductors	2,245,595.66	— 790,643.71
Miscellaneous accounts receivable	5,573,662.96	— 1,766,560.21
Material and supplies	33,367,058.46	+ 2,441,361.04
Interest and dividends receivable	2,831,922.10	— 321.09
Rents receivable	14,018.83	—
Other current assets	7,716,039.95	+ 806,683.43
Total	$85,537,781.82	+ $2,219,664.62
DEFERRED ASSETS		
Working fund advances	$89,912.36	— $39,077.42
Insurance and other funds	35,810.00	—
Other deferred assets	1,234,085.24	— 896,298.16
Total	$1,359,807.60	— $935,375.58
UNADJUSTED DEBITS		
Rents and insurance premiums paid in advance	$251,042.91	+ $103,199.11
Discount on capital stock	5,959,083.45	+ 2,145,483.45
Discount on funded debt	10,820,436.31	+ 1,842,350.44
Other unadjusted debits	7,060,054.76	— 749,165.11
Securities issued or assumed—Unpledged (a)	2,601,375.00	+ 1,075,250.00
Securities issued or assumed—Pledged (a)	99,000.00	— 1,250.00
Total	$24,090,617.43	+ $3,341,867.89
Grand total	$2,321,512,942.45	+$43,742,399.19

LIABILITIES—DECEMBER 31, 1930, COMPARED WITH DECEMBER 31, 1929, EXCLUDING OFFSETTING ACCOUNTS

		December 31, 1930	+ Increase — Decrease
Liabilities			
CAPITAL STOCK			
Southern Pacific Company	$372,381,805.64		
Transportation System Companies	383,488,220.00		
Total	$755,870,025.64		
Held by the public		$372,403,865.64	—
Held within the system		383,466,160.00	+ $2,396,320.00
Total stock		$755,870,025.64	+ $2,396,320.00
Premium on capital stock of Southern Pacific Company		$6,304,845.00	—
Total		$762,174,870.64	+ $2,396,320.00
GOVERNMENTAL GRANTS			
Grants in aid of construction		$742,162.99	+ $87,862.50
LONG TERM DEBT			
Funded debt unmatured:			
Southern Pacific Company	$291,871,225.00		
Transportation System Companies	492,801,502.81		
Total	$784,672,727.81		
Held by the public		$651,372,620.88	+$39,425,281.59
Held within the system		133,300,106.93	+ 905,000.00
Total funded debt		$784,672,727.81	+$40,330,281.59
Nonnegotiable debt to affiliated companies:			
Open accounts		38,582,323.52	— 7,658,667.61
Total		$823,255,051.33	+$32,671,613.98
CURRENT LIABILITIES			
Loans and bills payable		$3,000,000.00	— $3,040,000.00
Traffic and car-service balances payable		3,538,358.26	— 975,446.19
Audited accounts and wages payable		11,829,702.38	— 5,124,116.74
Miscellaneous accounts payable		1,743,274.99	+ 178,262.67
Interest matured unpaid		264,333.81	— 51,181.13
Interest payable January 1st		3,772,240.00	— 7,425.00
Dividends matured unpaid		45,402.21	+ 3,844.50
Dividends payable January 1st		5,585,727.00	—
Funded debt matured unpaid		63,570.00	— 159,010.00
Unmatured interest accrued		7,171,438.77	+ 624,164.01
Unmatured rents accrued		171,332.42	+ 1,467.14
Other current liabilities		511,522.61	— 287,127.66
Total		$37,696,902.45	— $8,836,568.40
DEFERRED LIABILITIES			
Liability for provident funds		$33,750.07	+ $14,489.53
Other deferred liabilities		409,953.53	— 69,044.16
Total		$443,703.60	— $54,554.63
UNADJUSTED CREDITS			
Tax liability		$6,363,652.53	— $2,776,839.67
Insurance and casualty reserves		3,346,024.16	— 19,439.11
Accrued depreciation—Road		3,394,942.61	+ 429,966.51
Accrued depreciation—Equipment		126,088,341.68	+ 8,051,001.47
Other unadjusted credits		36,656,550.92	+ 2,246,295.49
Total		$175,849,511.90	+ $7,930,984.69
CORPORATE SURPLUS			
Additions to property through income and surplus		$10,655,855.92	+ $315,948.76
Funded debt retired through income and surplus		26,454,920.44	+ 261,800.49
Sinking fund reserves		21,600,785.92	+ 1,485,862.17
Appropriated surplus not specifically invested		3,818,177.83	—
Total appropriated surplus		$62,529,740.11	+ $2,063,611.42
Profit and loss—Balance		458,820,999.43	+ 7,483,129.63
Total corporate surplus		$521,350,739.54	+ $9,546,741.05
Grand total		$2,321,512,942.45	+$43,742,399.19

(a) The amounts shown are excluded from total assets, and corresponding amounts are excluded from outstanding funded debt, in accordance with regulations of the Interstate Commerce Commission.

[ADVERTISEMENT]

The increase of $1,264,318.74 in the account Interest on Funded Debt—Bonds and Notes is made up as follows:

	Principal	Interest
Bonds issued this year and the interest accrued thereon this year	$47,462,000.00	$1,346,411.37
Bonds retired this year and the difference between the interest accrued thereon this year and the interest accrued thereon last year	*8,036,718.41	*192,542.54
Increase in outstanding bonds held by the public	$39,425,281.59	
Increase in interest accrued this year, as compared with last year, on the bonds so issued and retired		$1,153,868.83
Difference between a full year's interest this year, and the interest accruing last year, on $72,064,000.00 of bonds issued last year, as shown on pages 15 and 16 of last year's report	$1,296,847.13	
Deduct		
Interest on $455,000.00 of such bonds which were issued last year but which were retired this year	*9,668.75	1,287,178.38
		$2,441,047.21
Less		
Interest accrued last year on $64,549,407.97 of bonds retired last year, as shown on page 16 of last year's report	*$1,167,336.80	
Net decrease in interest paid on bonds held in sinking funds	*9,391.67	*1,176,728.47
Net increase		$1,264,318.74

* Items in italics represent decreases.

Of the increase of $105,751.98 in the account Amortization of Discount on Funded Debt, the sum of $41,378.82 represents the year's proportion of discount on bonds issued during the year, while the remaining $64,373.16 represents, principally, the difference between a full year's accrual this year, of discount on bonds issued last year, and the portion of discount on such bonds applicable to, and taken into, the accounts last year.

The decrease of $136,104.19 in the account Miscellaneous Income Charges is due, principally, to including in such account, last year, your Company's proportion of the annual charge for amortization of investment in Associated Pipe Line, covering both the year 1928 and the year 1929, the charges for the year 1928 having been delayed pending agreement as to the amount of your Company's proportion thereof. Such charges are apportioned among the three owning companies (Associated Oil Company, Standard Oil Company of California, and Southern Pacific Company) on the basis of use of the pipe line.

The dividends paid for 1930 were appropriated from the profit and loss surplus, and therefore do not appear in the income account. Payments for 1930 amounted to $22,345,938.00, compared with $22,342,900.71 for 1929. The figures for each year include $30.00, representing dividends on stocks of Transportation System Companies held by the public, and the figures for 1930 also include $3,000.00, representing dividends on stocks of Solely Controlled Affiliated Companies held by the public.

Investment Assets—Southern Pacific Lines

The following is a brief description of the investment assets of the Transportation System, reported in the balance sheet, viz:

INVESTMENT IN TRANSPORTATION PROPERTY $1,513,431,298.50

Book value of investment in transportation property carried on the books of the companies comprising the Transportation System, consisting of 13,825 miles of first main track, 1,042 miles of additional main track, 6,068 miles of yard track and sidings, the Company's terminals at Galveston, a ten-story office building in San Francisco, 2,411 locomotives, 2,834 passenger-train cars, 79,140 freight-train cars, 6,142 company service cars, 19 ocean steamships, 12 passenger-ferry and car-transfer boats, 11 tugs, 69 barges, and 19 other vessels, the whole forming a transcontinental system extending from New York and Baltimore via New Orleans and Galveston, to San Francisco, California, and to Portland, Oregon, with a line extending from Ogden, Utah, to San Francisco, California.

SINKING FUNDS 19,546,325.66

Sinking funds for the redemption of outstanding funded debt, consisting principally of $18,573,000, par value, bonds of Transportation System Companies; $912,000, par value, bonds of Solely Controlled Affiliated Companies; $50,000, par value, bonds of other companies; and $223,128.98 cash in hands of Trustees.

MISCELLANEOUS PHYSICAL PROPERTY 3,274,245.68

Book value of terminal and other real estate acquired in anticipation of future use.

INVESTMENTS IN AFFILIATED COMPANIES 653,523,753.56

Investments in securities of Transportation System Companies, which are included in the outstanding obligations as shown by the balance sheet, but which are owned within the system;

Investments in securities of, and advances to, Solely Controlled Affiliated Companies and Jointly Controlled Affiliated Companies collateral to, but not a part of, the Transportation System, representing, principally, investments as follows:

Steam Railways (full ownership), owning 105 steam locomotives, 213 passenger-train cars, 1,997 freight-train cars, 603 company service cars, 5 passenger ferry steamers, and 1 gasoline launch—operated mileage 1,967.01

Electric Railways in California (full ownership), owning 44 electric locomotives, 1 steam locomotive, 4 gas-electric locomotives, 554 motor cars, 19 motor car trailers, 531 freight-train cars, 93 company service cars, and 1 gasoline launch—operated mileage (The above railways also own 157 auto buses and 2 auto service trucks, used in the operation of 239 miles of auto bus routes; and in addition own a one-half interest in 148 auto buses, 2 auto service cars, 2 auto trucks, and 1 auto business car, used in the operation of 51 miles of auto bus routes.) 741.58

Steam Railways (half-ownership), owning 18 steam locomotives, 34 passenger-train cars, 272 freight-train cars, and 55 company service cars—operated mileage 324.22

Electric Railways in California (one-third ownership), owning 4 electric locomotives, 15 motor cars, 2 motor car trailers, 33 freight-train cars, and 2 company service cars—operated mileage 55.68

Total operated mileage of railways collateral to, but not a part of, the Transportation System 3,088.49

Motor Bus Lines (one-third ownership), owning 670 motor buses, 54 business cars, 35 service cars, and 13 express, baggage, and mail cars, operating over 10,735 miles of bus routes, extending from Portland, Oregon, south, through San Francisco, Los Angeles, and San Diego, California, and El Paso and Houston, Texas, to Lake Charles, Louisiana, and extending from San Francisco, east, to Salt Lake City, Utah. This service is operated independently, but, in certain instances, coordination of the motor bus schedules with the steam train service of your Company's rail lines has been effected, which is most beneficial to both, and further coordination is being developed when and where conditions warrant.

Motor Bus Lines (* two-thirds ownership), owning 127 motor buses, 5 business cars, 10 service cars, and 15 freight cars, operating over 841 miles of bus routes in the vicinity of Los Angeles, and in the counties of Orange, Riverside, and San Bernardino, California.

* The remaining one-third interest is owned by the Pacific Grayhound Corporation, one-third of the capital stock of which corporation is owned by your Company.

Transport Companies (full ownership), providing shippers and receivers of less than carload freight with store-door pickup and delivery service at various points along the Company's lines, through coordination of motor truck service of the Transport Companies with the rail service of your Lines. At December 31, 1930, the Transport Companies were operating at 473 important stations on your Lines, and the service is being rapidly extended.

Land Companies (full ownership), owning 8,400,370 acres of lands in various states traversed by the Southern Pacific Lines, and 5,775 town lots. Of these town lots, 2,827 are located in the State of Texas; 644 in the State of Nevada; and 2,304 in the State of California, 683 of which are located in Los Angeles and vicinity.

Oil Companies (full ownership), owing 3,562 acres (including 3,166 acres fully owned and 396 acres jointly owned), and holding under lease 6,558 acres of producing and prospective oil lands in Texas and Louisiana, together with ownership of mineral rights in 86,194 acres of prospective oil lands in Texas. Number of producing wells, 163. Annual production for 1930 was 2,028,983 barrels.

Timber Lands (full ownership), 21,565 acres of timber lands and 44,829 acres of other lands, including 2 saw mills.

Coal Lands (full ownership), 22,688 acres of coal lands in Oregon and Colorado, 6,237 acres of prospective coal lands in Texas, and 2,711 acres of lignite, clay, and other lands in Texas and Louisiana.

Terminal Companies (full ownership), owning 18 acres of land in the City of Los Angeles, California, with improvements, including three two-story market buildings, and one seven-story, two six-story, and one four-story warehouse buildings, situated on the line of Southern Pacific in the heart of the wholesale district of Los Angeles.

Southern Pacific Golden Gate Ferries, Ltd. (* one-half ownership), owning 28 automobile ferries operated in San Francisco Bay, between San Francisco and other Bay points.

* Southern Pacific Company's interest is represented by the ownership of 50.12 per cent. of the voting shares of the Southern Pacific Golden Gate Company, the holding Company which owns the entire outstanding capital stock of the Southern Pacific Golden Gate Ferries, Ltd.

Southern Pacific Building Co. (full ownership), owning a nine-story office building at Houston, Texas.

Associated Pipe Line Co. (one-third ownership), owning 561 miles of oil pipe line serving California oil fields.

Pacific Fruit Express Co. (half ownership), operat-

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Investment Assets (Continued)

ing 41,226 refrigerator cars serving Southern Pacific, Union Pacific, and Western Pacific lines. Stock interest, as indicated, in following companies operating railroad terminal facilities: El Paso (Texas) Union Passenger Depot Co., 50 per cent; Ft. Worth (Texas) Union Passenger Station Co., 50 per cent; Northern Pacific Terminal Co. (Portland, Ore.), 20 per cent; Ogden (Utah) Union Railway & Depot Co., 50 per cent; and Union Terminal Co. (Dallas, Tex.) 12.50 per cent.	
OTHER INVESTMENTS	20,749,112.20
Of this amount, $630,027.79 represents cash in hands of Trustee, to be applied in payment for new equipment; and the remainder represents, principally, investments in securities of other companies.	
Total Investments	$2,210,524,735.60

Capital Stock—Southern Pacific Lines

There was no change during the year in the amount of outstanding capital stocks of the Southern Pacific Company and of the Transportation System Companies *held by the public.*

As stated on page 14 of last year's report, the stockholders at the annual meeting held at Anchorage, Kentucky, on April 9, 1930, approved an increase of $200,000,000 in the authorized Common Capital Stock of the Southern Pacific Company, bringing the total amount authorized to $594,451,800, consisting of 5,944,518 shares of the par value of $100 each The increase of $200,000,000 in the amount of capital stock authorized, became effective on April 16, 1930, with the filing of a certificate of increase with the County Clerk of Jefferson County, Kentucky.

Funded Debt—Southern Pacific Lines

To provide for the construction and acquisition of new rolling stock, an equipment trust, known as "Southern Pacific Company Equipment Trust, Series M," was created, and an issue of $6,000,000, par value, of Four and One-Half Per Cent. Equipment Trust Certificates authorized, all of which were issued during the year, pursuant to authority of the Interstate Commerce Commission's order dated May 14, 1930, in Finance Docket No. 8216. The certificates dated May 1, 1930, mature serially, in lots of $400,000, on May 1 of each year from 1931 to 1945, both inclusive; and have attached dividend warrants entitling the holders to dividends at the rate of four and one-half per cent. per annum from May 1, 1930, payable semi-annually on May 1 and November 1. In accordance with the terms of the trust, the certificates were guaranteed by the Southern Pacific Company.

On May 13, 1930, there were issued and sold, pursuant to authority of the Interstate Commerce Commission in its second supplemental order dated May 5, 1930, in Finance Docket No. 6045, $41,294,000 of Southern Pacific Company Oregon Lines First Mortgage Four and One-Half Per Cent. Gold Bonds, Series A, dated March 1, 1927, payable March 1, 1977, with interest payable semi-annually on March 1 and September 1, said bonds representing the balance of $61,294,000 of the Series A bonds authorized by the Commission on May 27, 1927, of which $20,000,000 were issued and sold during 1927, as set forth on page 14 of the 1927 report.

The net increase during the year in funded debt of Southern Pacific Company and Transportation System Companies *held by the public* amounted to $39,425,281.59, as follows:

FUNDED DEBT ISSUED DURING THE YEAR		
Southern Pacific Company Four and One-Half Per Cent. Equipment Trust Certificates, Series M, issued during the year to provide funds for the construction and acquisition of new rolling stock	$6,000,000.00	
Southern Pacific Company Oregon Lines First Mortgage Four and One-Half Per Cent. Series A Gold Bonds, issued to reimburse the treasury for capital expenditures heretofore made upon the properties of the Company located in Oregon	41,294,000.00	
El Paso & Southwestern Railroad Company First and Refunding Mortgage Five Per Cent. Gold Bonds delivered to the public during the year in exchange for an equal amount, par value, of bonds of El Paso & Southwestern subsidiary companies, in accordance with El Paso & Southwestern Refunding Plan, approved by Interstate Commerce Commission, December 26, 1923	168,000.00	
Total funded debt issued during the year		$47,462,000.00
Less		
FUNDED DEBT RETIRED DURING THE YEAR		
Southern Pacific Company Equipment Trust Certificates maturing during the year, paid off	$6,296,600.00	
Houston & Texas Central Railroad Company, Waco & Northwestern Division, First Mortgage Six Per Cent. Gold Bonds maturing May 1, 1930, paid off	705,000.00	
South Pacific Coast Railway Company First Mortgage Four Per Cent. Gold Bonds purchased from payments to sinking fund	206,000.00	
Los Angeles Public Market Company First Mortgage and Collateral Trust Six Per Cent. Serial Gold Bonds maturing during the year, paid off	30,500.00	
Texas & New Orleans Railroad Company, Dallas Division, First Mortgage Four Per Cent. Gold Bonds purchased from the public and held alive in the treasury of Southern Pacific Company	580,000.00	
Texas & New Orleans Railroad Company, State of Texas School Fund Debt, amount maturing during the year, paid off	3,918.41	
Bonds of El Paso & Southwestern subsidiary companies, acquired from the public during the year in exchange for an equal amount of El Paso & Southwestern R. R. Co. First and Refunding Mortgage Five Per Cent. Gold Bonds owned by Southern Pacific Company	168,000.00	
Other funded debt held by the public, retired during the year from payments to sinking funds	46,700.00	
Total funded debt held by the public, retired during the year		8,036,718.41
Net increase in funded debt held by the public		$39,425,281.59

Balance Sheet and Income Account of Solely Controlled Affiliated Accounts

Below will be found a condensed balance sheet as of December 31, 1930, compared with December 31, 1929, and a condensed income account for the year 1930, compared with the year 1929, of all separately operated Solely Controlled Affiliated Companies, combined:

BALANCE SHEET

	December 31,1930	+ Increase — Decrease
ASSETS		
Property investment	$318,730,835.77	— $4,183,706.23
Sinking funds	385,308.88	+ 32,478.06
Investments in affiliated companies:		
Stocks	4,430,845.34	+ 2,527,134.77
Bonds	418,950.00	—
Advances	22,246,724.62	— 7,718,436.64
Other investments	21,168,651.92	+ 2,501,263.44
Cash	2,277,792.45	+ 567,518.42
Accounts receivable	2,866,384.06	— 1,093,137.43
Material and supplies	3,836,822.91	— 328,127.80
Merchandise	33,191.88	+ 344.12
Deferred assets	2,680,299.35	— 177,855.99
Discount on securities	9,878,380.58	— 2,298,579.09
Other unadjusted debits	29,223,573.98	+ 1,723,547.04
Total assets	$418,177,761.74	— $8,447,557.33
LIABILITIES		
Capital stock	*$182,610,340.00	+ $253,180.00
Premium on capital stock	535,151.75	—
Funded debt:		
(a) Held by the public $32,602,000.00		
(b) Held within the system 56,450,000.00		
(c) Total	89,052,000.00	— 1,450,100.00
Nonnegotiable debt to affiliated companies	68,345,882.65	+ 439,641.02
Current liabilities	5,530,306.47	+ 718,244.62
Deferred liabilities	206,076.56	+ 76,091.78
Accrued depreciation	17,899,887.00	+ 822,727.15
Reserve for amortization of property investment	11,202,724.56	+ 528,504.91
Other unadjusted credits	13,995,870.51	— 702,527.98
Total liabilities	$389,378,239.50	+ $685,761.50
Additions to property through income and surplus	$2,072,336.60	+ $67,205.46
Funded debt retired through income and surplus	209,950.00	—
Sinking fund reserves	412,850.14	+ 14,372.31
Appropriated surplus not specifically invested	—	— 700,000.00
Profit and loss—Balance	26,104,385.50	— 8,514,896.66
Total corporate surplus	$28,799,522.24	— $9,133,318.83
Grand total	$418,177,761.74	— $8,447,557.33

INCOME ACCOUNT

	Year Ended December 31, 1930	+Increase —Decrease
Operating revenues	$35,388,617.87	— $6,026,582.59
Operating expenses (including depreciation)	28,690,608.76	— 4,113,753.93
Net revenue from operations	$6,698,009.11	— $1,912,828.66
Taxes	2,366,814.47	— 538,160.79
Uncollectible revenues	1,556.55	+ 828.91
Equipment and joint facility rents—Net	525,534.39	+ 22,707.58
Net operating income	$3,804,103.70	— $1,398,204.36
Nonoperating income	961,082.23	— 260,334.21
Gross income	$4,765,185.93	— $1,658,538.57
Interest on funded debt	$4,252,469.38	— $115,657.06
Other deductions from gross income	1,354,637.92	+ 224,892.86
Total deductions	$5,607,107.30	+ $109,235.80

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	Year Ended December 31, 1930	+Increase —Decrease
Net income ‡	*$841,921.37*	— $1,767,774.37
Income applied to sinking and other reserve funds	$32,372.31	— $1,318.48
Income balance transferred to credit of profit and loss †	*$874,293.68*	— $1,766,455.89

* The amount of outstanding capital stock includes $1,300.00 owned by Directors and $51,110.00 owned by the public; the remaining $182,557,930.00 being owned within the system. ‡ Deficit. †Debit.

General

The dividends for the year, on the capital stocks of the Southern Pacific Company and its Transportation System and Solely Controlled Affiliated Companies held by the public, amounted to $22,345,938.00, as follows:

Dividends on capital stock of the Southern Pacific Company:		
1½ per cent. paid April 1, 1930	$5,585,727.00	
1½ per cent. paid July 1, 1930	5,585,727.00	
1½ per cent. paid October 1, 1930	5,585,727.00	
1½ per cent. payable January 2, 1931	5,585,727.00	
Total Southern Pacific Company		$22,342,908.00
Dividends on stocks of Transportation System Companies held by the public		30.00
Dividends on stocks of Solely Controlled Affiliated Companies held by the public		3,000.00
Total dividend payments for the year		$22,345,938.00
The total taxes for the year, of the Transportation System and of all separately operated Solely Controlled Affiliated Companies, amounted to		$21,608,477.07

The Board respectfully calls attention of the Stockholders to the report of the Chairman of the Executive Committee, shown hereinafter.

By order of the Board of Directors,
HENRY W. DE FOREST,
Chairman of the Board.

	Year Ended December 31, 1930	+Increase —Decrease	Per Cent.
Transportation for investment—Credit	*1,430,183.14*	+ 19,318.67	1.33
Total railway operating expenses	$187,644,861.44	—$32,053,541.67	14.59
Net revenue from railway operations	$71,113,267.30	—$20,157,468.02	22.09
Railway tax accruals	$19,241,662.60	— $3,021,944.94	13.57
Uncollectible railway revenues	82,580.36	+ 9,590.49	13.14
Railway operating income	$51,789,024.34	—$17,145,113.57	24.87
Equipment rents—Net	8,480,876.41	— 489,900.21	5.46
Joint facility rents—Net	199,487.45	— 22,013.86	9.94
Net railway operating income	$43,108,660.48	—$16,633,199.50	27.84

TRAFFIC STATISTICS
(STEAM RAIL LINES)

FREIGHT TRAFFIC			
Freight service train-miles	24,676,666	— 4,737,792	16.11
Tons carried—revenue freight	52,744,399	— 11,160,699	17.46
Ton-miles—revenue freight	13,755,317,312	— 2,729,714,696	16.56
Loaded cars per train	29.14	+ .87	3.08
Net tons per train—all freight	621.75	— 7.37	1.17
Revenue per ton-mile — revenue freight	1.358 cents	+ .010 cents	.74
Average distance carried—revenue freight (miles)	260.79	+ 2.83	1.10
PASSENGER TRAFFIC			
Passenger service train-miles	25,153,979	— 894,662	3.43
Passengers carried—revenue	11,262,415	— 1,614,022	12.53
Passenger-miles—revenue	1,551,398,937	— 215,102,272	12.18
Passengers per train—revenue passengers	59.31	— 6.12	9.35
Passenger revenue per passenger-mile	2.626 cents	— .071 cents	2.63
Average distance carried—revenue passengers (miles)	137.75	+ .56	.41

The following tabulation gives the transportation operations for the five years 1926, 1927, 1928, 1929, and 1930, compared with 1917, the last year prior to Federal control, and with 1921, the first complete year subsequent to federal control, the figures being given in round thousand dollars:

	1930	1929	1928	1927	1926	1921	1917
Operating revenues	$258,758	$310,969	$300,104	$297,745	$298,801	$269,494	$193,971
Per cent. of 1917	133.40	160.32	154.72	153.50	154.04	—	—
Per cent. of 1921	96.02	115.39	111.36	110.48	110.87	—	—
Operating expenses	$187,645	$219,698	$216,734	$218,179	$215,595	$212,572	$120,601
Per cent. of 1917	155.59	182.17	179.71	180.91	178.77	—	—
Per cent. of 1921	88.27	103.35	101.96	102.64	101.42	—	—
Operating ratio	72.52	70.65	72.22	73.28	72.15	78.88	62.17
Net revenue from railway operations	$71,113	$91,271	$83,370	$79,566	$83,206	$56,922	$73,370
Per cent. of 1917	96.92	124.40	113.63	108.44	113.41	—	—
Per cent. of 1921	124.93	160.34	146.46	139.78	146.18	—	—
Railway tax accruals	$19,242	$22,264	$21,525	$21,214	$21,477	$15,539	$13,792
Per cent. of 1917	139.52	161.43	156.07	153.81	155.72	—	—
Per cent. of 1921	123.83	143.28	138.52	136.52	138.21	—	—
Net railway operating income	$43,109	$59,742	$54,908	$51,604	$55,797	$35,947	$62,253
Per cent. of 1917	69.25	95.97	88.20	82.89	89.63	—	—
Per cent. of 1921	119.92	166.19	152.75	143.56	155.22	—	—
Traffic units (ton-miles, all freight, plus three times passenger-miles)—millions	20,324	24,150	23,149	22,908	22,679	17,451	20,877
Per cent. of 1917	97.35	115.68	110.88	109.73	108.63	—	—
Per cent. of 1921	116.46	138.39	132.65	131.27	129.96	—	—

Southern Pacific Company

Report of the Executive Committee

NEW YORK, N. Y., April 30, 1931

TO THE BOARD OF DIRECTORS OF THE SOUTHERN PACIFIC COMPANY:

Your Executive Committee submits this report of the transportation Operations and other matters relating to the transportation properties of the Southern Pacific Lines, for the fiscal year ended December 31, 1930.

Transportation Operations—Southern Pacific Lines

The following table shows the Net Railway Operating Income and Traffic Statistics of the Transportation System for the year 1930, compared with those for the year 1929:

	Year Ended December 31, 1930	+Increase —Decrease	Per Cent.
Average miles of road operated	13,831.97	+ 144.09	1.05
NET RAILWAY OPERATING INCOME			
RAILWAY OPERATING REVENUES			
Freight	$193,581,109.77	—$37,985,527.74	16.40
Passenger	43,117,759.68	— 7,068,156.53	14.08
Mail and express	11,389,479.15	— 3,634,645.68	24.19
All other transportation	5,200,917.96	— 1,870,806.40	26.45
Incidental	6,380,273.45	— 1,747,267.42	21.50
Joint facility—Credit	276,053.60	— 91,845.91	24.96
Joint facility—Debit	*1,187,464.87*	+ 187,239.99	13.62
Total railway operating revenues	$258,758,128.74	—$52,211,009.69	16.79
RAILWAY OPERATING EXPENSES			
Maintenance of way and structures	$32,755,049.02	— $6,516,232.64	16.59
Maintenance of equipment	44,413,236.07	— 9,868,636.68	18.18
Total maintenance	$77,168,285.09	—$16,384,869.32	17.51
Traffic	7,160,693.43	— 270,866.25	3.64
Transportation	88,788,291.93	— 14,090,833.85	13.70
Miscellaneous operations	4,681,123.28	— 981,732.05	17.34
General	11,276,650.85	— 344,558.87	2.96

As has been stated in reports for previous years, the Transportation Act of 1920 provides that the railways shall be allowed to maintain schedules of rates that will enable them to receive a fair return upon the aggregate value of railway property held for and used in the service of transportation, such fair return being 5¾ per cent., as last fixed by the Interstate Commerce Commission, under authority of the Act. Notwithstanding the heavy volume of traffic handled, and the marked gain in operating efficiency as reflected in net revenue from railway operations, the existing rate structure, during each year since enactment of the Transportation Act, has failed to give your Company the fair return contemplated by the Act, the rate of return upon the book value of road and equipment of the lines constituting the Transportation System having been as follows:

1921	3.36%
1922	4.29%
1923	4.81%
1924	3.99%
1925	3.77%
1926	3.98%
1927	3.59%
1928	3.76%
1929	4.02%
1930	2.85%
Average return for 10 years	3.84%

Total Railway Operating Revenues for 1930 amounted to $258,758,128.74. They were the smallest for any year since Federal control, and were $52,211,009.69, or 16.79 per cent., less than for 1929.

This marked decline in Operating Revenues was brought about by the large decrease in the volume of freight and passenger traffic handled by your Company's lines during 1930, caused by the nation-wide depression in practically all lines of business, which developed in the latter part of 1929 and continued through 1930, in addition to which your Company's

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revenues suffered losses from past rate reductions and from unregulated competition on highways, waterways, and airways.

The decrease in operating revenues was accompanied by a decrease of $32,053,541.67, or 14.59 per cent., in operating expenses; $3,021,944.94 in taxes; and $502,323.58 in equipment and joint facility rents and other charges; the result being a decrease of $16,633,199.50, or 27.84 per cent., in Net Railway Operating Income.

Freight Revenues decreased $37,985,527.74, or 16.40 per cent., the result, principally, of a decrease of 2,729,714,696 ton-miles, or 16.56 per cent., in the volume of revenue freight carried by your Lines.

As stated above, this decrease was due, almost entirely, to the curtailed activities in all lines of business resulting from the existing depression. The extent to which the revenues from the various groups of commodities declined is shown by the following tabulation:

Revenues from	Decreased	Per Cent.
Products of Agriculture	$1,676,868	2.70
Animals and Products	506.977	6.07
Products of Mines	3,425,280	19.10
Products of Forests	7,277,830	26.16
Manufactures and Miscellaneous	20,332,608	22.32
Total Carload Freight	$33,219,563	16.02
Less-than-Carload Freight	4,765,964	19.67
Total	$37,985,527	16.40

The decrease in revenues from products of agriculture was due, principally, to decrease in revenues from cotton and from citrus fruits. The decrease in cotton revenues resulted from the short crop in Texas last year, and from the increased amount of cotton handled this year by unregulated motor trucks which, from August to December, 1930, carried over one million bales to Texas Gulf ports alone. The decrease in revenues from citrus fruits was due to the fact that the 1929 crop was considerably above normal. These decreases were partly offset by increased revenues from dried fruits and vegetables, due to the 1929 movement being below normal; from deciduous fruits the result of severe frost damage to the 1929 crop; and from lettuce and fresh vegetables, resulting from an increase in the acreage planted and larger yields of such crops in all districts.

The large decreases in revenues from the other classes of commodities listed above were due, principally, to the general business depression prevailing throughout the year. In addition to the detrimental effects of the depression, your Company's revenues also suffered from increased competition of motor trucks for tonnage of canned goods, hay, refined petroleum, gasoline, and less-than-carload freight, and from competition via the Panama Canal.

Passenger Revenues continued to decline, the decrease for 1930 compared with 1929 being $7,068,156.53, or 14.08 per cent., the result largely of a decrease in both local and through passenger traffic due to the prevailing conditions, and to the continued inroads upon rail line passenger traffic by motor coaches, private automobiles, and airplanes.

Mail Revenue decreased $2,277,125.90, or 31.04 per cent., due, principally, to the fact that mail revenues for 1929 included the sum of $2,096,312.07, received during that year, representing increased mail pay awarded by the Government for the period May 9, 1925, to July 31, 1928.

Express Revenue decreased $1,357,519.78 or 17.66 per cent, the result of a general decrease during the year in such traffic.

All Other Transportation Revenue decreased $1,870,806.40 or 26.45 per cent., due, principally, to the fact that the 1929 accounts, from January to April, included the revenues received from the operation of the automobile ferry steamers and facilities on San Francisco Bay prior to the transfer of such steamers, on May 1, 1929, to the Southern Pacific Golden Gate Ferries, Ltd., as explained on Page 32 of last year's report, and to the fact that the accounts of the Southern Pacific Steamship Lines for the first half of 1929 included the revenues from the operations of the oil tank steamers Tamiahua, Topila, and Torres, prior to the date of the sale of such steamers in June, 1929. The loss in revenue, due to the transfer of the ferry steamers and facilities, is more than offset, however, by the reduction in operating expenses resulting from the sale, and by dividends, bond interest, and rentals received from the Ferry Company. Other decreases were the result of diminished Pullman car revenues, due, largely, to loss in through passenger travel, and smaller switching revenues due to falling off in freight traffic.

Incidental Revenues decreased $1,747,267.42, or 21.50 per cent., due, principally, to decreased dining car, club car, and restaurant revenues, as a result of the greatly reduced passenger traffic heretofore mentioned, and also to the fact that the 1929 accounts included the incidental revenues derived from the operations of the automobile ferry steamers and facilities on San Francisco Bay prior to May 1, 1929, the date on which such steamers were transferred to the Southern Pacific Golden Gate Ferries, Ltd.

As hereinbefore stated, operating expenses were substantially reduced, but not beyond a point consistent with safe operation. Notwithstanding the curtailment of maintenance expenses, the property was adequately maintained and is in good physical condition. The following table shows the principal items of material used in repairs and renewals during the past six years:

MATERIALS USED IN REPAIRS AND RENEWALS

	1930	1929	1928	1927	1926	1925
New Steel, track miles	478.36	536.09	506.77	536.82	510.14	349.09
Ties, number	3,340,980	4,211,581	4,289,056	4,431,318	4,832,239	4,767,408
Tie-plates, number	6,620,094	7,861,685	6,981,084	6,442,358	7,516,596	6,162,239
Piling, lineal feet	604,299	683,717	666,291	403,417	489,580	883,017
Lumber, feet b.m.	22,643,189	23,647,727	23,540,807	24,057,955	27,528,359	37,661,011

Traffic Expenses decreased $270,866.25, or 3.64 per cent., the result, principally of decreased advertising, and stationery and printing expenses.

Transportation Expenses decreased $14,090,833.85, or 13.70 per cent., due, principally, to a decrease of 2,729,714,696 ton-miles, or 16.56 per cent., in the volume of revenue freight carried by your Lines; to a decrease in the expense of fuel for locomotives due to greater economy in the consumption thereby and to a decrease in the price of fuel oil; to the fact that the 1929 accounts, from January to April, included the expenses in connection with the operation of the vehicular ferry service facilities on San Francisco Bay, prior to the transfer of such facilities on May 1, 1929, to Southern Pacific Golden Gate Ferries, Ltd.; and to economies in operation effected during the year.

The constant campaign carried on for years to reduce fuel consumption in locomotives, has been reflected by a gradual but large reduction in the amount of fuel used in proportion to the ton-miles of traffic moved. The reduction in pounds of fuel used per 1,000 gross ton-miles in 1930, compared with 1929, amounted to 1.94 per cent. in passenger service, and 2.67 per cent. in freight service. The value of the economy realized in 1930, compared with 1929, amounted to 342,630, and in 1930 compared with 1913, to $9,890,998. The following table shows results obtained in fuel economy in 1930, compared with the preceding two years, and with the year 1913:

LOCOMOTIVE FUEL PERFORMANCE

	1930	1929	1928	1913	Comparison of 1930 With 1929	Comparison of 1930 With 1928	Comparison of 1930 With 1913
Pounds of fuel per 1,000 gross ton-miles:							
Passenger service	120.04	122.41	124.03	206.67	— 1.94%	— 3.22%	— 41.92%
Freight service	110.83	113.87	116.52	192.83	— 2.67%	— 4.88%	— 42.52%
Saving in value of fuel:							
1930 compared with 1929							$342,630
1930 compared with 1928							627,288
1930 compared with 1913							9,890,998

Miscellaneous Operations decreased $981,732.05, or 17.34 per cent., due, principally, to decreased dining car operations resulting from the large decrease in passenger traffic, and to economies effected in operation.

General Expenses decreased $344,558.87, or 2.96 per cent., resulting, principally, from reduced expenditures for stationery and printing and general office supplies and expenses, and from a decreased amount of valuation work, partially offset by increased pension payments and relief department expenses.

Railway Tax Accruals decreased $3,021,944.94, or 13.57 per cent., due to decreased net income subject to Federal income tax, and to a decrease in State and County taxes.

Equipment Rents decreased $489,900.21, or 5.46 per cent. This was the result of the decreased number of foreign and private line freight cars on your Lines during the year, and of the expedited movement of such cars.

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Investment in Road and Equipment—Southern Pacific Lines

The increase during the year in Investment in Road and Equipment of the Transportation System, as shown in the balance sheet, amounted to $28,962,490.67, as follows:

Expenditures for Road Extensions		$607,415.28
Expenditures for Additions and Betterments:		
Rolling Stock	$13,435,233.94	
Floating Equipment	183,271.97	
Other Additions and Betterments	25,431,700.39	39,050,206.30
Total Expenditures		$39,657,621.58
Add		
Investment in Road and Equipment of the Inter-California Railway in California at January 1, 1930, on which date such company was taken into the Transportation System		3,379,614.67
		$43,037,236.25
Deduct		
Improvements to property held under lease, included in above expenditures, transferred to "Improvements on Leased Railway Property"		$3,904.15
Adjustments in construction accounts, completed lines		226,375.76
Property retired, equipment vacated, and other adjustments		13,844,465.67 14,074,745.58
Net increase in Investment in Road and Equipment		$28,962,490.67

The following table shows the number of units of each class of rolling stock owned at December 31, 1930, and at December 31, 1929, and the number of units of each class added and retired during year:

Class	Owned Dec. 31, 1930	Owned Dec. 31, 1929	Changes During the Year: Added	Changes During the Year: Retired
Locomotives	2,411	2,408	55	52
Passenger-train cars	2,834	2,786	62	14
Freight-train cars	79,144	80,619	670	2,145
Company service equipment	6,142	6,083	612	553

Among the important improvements completed during the year or in course of construction at the end of the year, were the following projects, viz:

THE MARTINEZ-BENICIA BRIDGE

On page 26 of last year's report mention was made of the progress in the construction begun in May, 1929, by your Company, of a double track railroad bridge across Suisun Bay, 5,600 feet long, to replace the train-ferry between Port Costa and Benicia. This bridge was opened to traffic on October 15, 1930, and was formally dedicated on November 1, 1930, as "The Martinez-Benicia Bridge." The car-transfer steamers "Solano" and "Contra Costa," which were used for the train-ferry service, have been retired, and all traffic is now carried by the new bridge This is the longest and heaviest railroad bridge west of the Mississippi. It affords more dependable and quicker transportation, and its use will result in substantial operating economies.

SAN JOSE LINE CHANGE

Considerable progress was made during the year by the City of San Jose, California, in negotiations with property owners, covering property damages to be borne by that City in connection with the construction by your Company of the new route through the City of San Jose, mentioned on page 26 of last year's report; and a contract has been let for the construction of the first subway at Park Avenue. It is expected that substantial progress will be made during the year 1931

NEW BRANCH LINE FROM SANDIA TO HOLTVILLE, CALIFORNIA

Pursuant to authority granted by the Interstate Commerce Commission in its order, dated March 31, 1930, in Finance Docket No. 8097, your Company completed during the year and placed in operation on June 15, 1930, an extension of the Sandia Branch of the Inter-California Railway in California. The new line extends from Sandia to a connection with the Holton Inter-Urban Railway at Holtville, California, a distance of 5.78 miles, and provides your Lines with better access to a highly developed agricultural region in the Imperial Valley.

AUTOMATIC BLOCK SIGNALS

Further progress was made during the year in completing the installation of automatic block signals on your Company's primary main lines, 292 additional miles of such track being so equipped in 1930. The small remaining mileage of primary main line not yet equipped with signal protection, is line on which traffic is confined to freight only, or where normal passenger business consists of only one passenger train a day each way. The work of installing automatic block signals on such lines will be done from time to time as traffic increases justify the expense.

SIGNAL DISPATCHING SYSTEM

The installation of 40 miles of signal dispatching system between Stockton and Brighton, California, mentioned in last year's report, was completed in April, 1930, and its operation during the subsequent season of heavy business expedited materially the handling of trains. The system made possible a reduction in running time of one hour and seven minutes on eastbound freight trains, and one hour and ten minutes on westbound freight trains, between Tracy and Roseville. Ninety per cent. of the meets in the signal dispatching system territory are non-stop meets, that is, neither train stops at the station to await the other as was formerly necessary.

ENGINE TERMINAL AT TAYLOR (LOS ANGELES)

The engine terminal at Taylor (Los Angeles), providing an 18-stall engine house, a 120-foot turntable, a machine shop, a boiler house, and related facilities, mentioned in last year's report, was completed and placed in operation July 1, 1930.

NEW FREIGHT LINE TO FRESNO YARD

The new freight line between Kerman and Biola Junction, to be used to reach the new freight train yard outside, and west of, the city limits of Fresno, mentioned in last year's report, was completed and placed in operation in the early part of 1930.

SECOND TRACK

During the year, the second track between Little Mountain and West Weber, Utah, and between Saline and Promontory Point, Utah, mentioned in last year's report, and also the second track between Saline and Bridge, Utah, the whole aggregating 13.46 miles, were completed and placed in operation. The completion of this work leaves to be constructed only 183.51 miles of second track to complete the double tracking of the line between Oakland and Ogden. The stretches making up this 183.51 miles are shown on page 27 of last year's report.

There were also completed and placed in operation during the year, 8.48 miles of second track on the line between San Francisco and Watsonville Junction, California, making an aggregate of 66.58 miles of double track on the 100 miles of line between those points.

NEW PASSENGER STATION, STOCKTON, CALIFORNIA

To meet the need of the increased population of Stockton, California, there was completed during the year a new two-story brick passenger station at that point, with a 1,000 foot concrete platform. The new station is modern and well appointed in every respect, the main building being 44 x 89 feet, with extensions of 36 x 57 feet on each end. The entire second floor will house the Division Offices located at that point.

NEW TRACKS AT LOS ANGELES, CALIFORNIA

To eliminate the operation of freight trains to and from your Company's Yuma line, from the congested business area of Alameda Street, Los Angeles, in compliance with the wishes of the City and in accordance with the agreement with the Union Pacific Railroad Company for the joint operation of the passenger station and of certain freight facilities at Los Angeles, your Company, during the year, began the construction of a double track line on the east side of the Los Angeles River, to connect with the existing line of the Union Pacific Railroad Company, with a double wye connection at Alhambra Street with the Yuma line, and a connection at Humboldt Street with the line leading to Taylor freight yard. The work undertaken also includes a grade separation where the new line crosses the tracks of the Atchison, Topeka & Santa Fe Railroad Company. The new line and the existing line of the Union Pacific between Humboldt and Butte Streets (which will be used jointly with the Union Pacific), will permit freight trains from the Yuma line to reach Taylor yard, north of Los Angeles, and to reach San Pedro and points south of Los Angeles, without passing through the congested area of the City on the west side of the Los Angeles River, thus expediting the movement of such trains. It is expected that this work will be completed by June 1, 1931.

BONITO DAM (NEW MEXICO)

In March, 1930, construction was begun on a rock fill type dam, 97 feet high, across the Bonito River in the White Mountains, twenty-six miles southeast of Carrizozo, New Mexico. This dam will provide additional storage and a more dependable water supply for eight water stations on your Lines between Carrizozo and Pastura, New Mexico This work, the cost which is estimated at about $530,000, is expected to be completed early in 1931.

NEW PASSENGER STATION, HOUSTON, TEXAS

Under agreement with the City of Houston, the Texas & New Orleans Railroad Company will construct a new passenger station on the site of the present station at Houston, Texas. This project involves the abandonment of existing street crossings over the terminal property of your lines; also the construction by the City of trafficways on each side of the passenger terminal facilities, with connecting under-

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passes at each end, work on which is under way. Work by the Company on the construction of the station and train facilities will be begun as soon as the rearrangement by the City of the streets fronting the station is completed.

EXTENSION OF LOCKPORT (LOUISIANA) BRANCH

Pursuant to authority granted by the Interstate Commerce Commission in its order, dated June 26, 1930, in Finance Docket No. 8226, construction was begun during the year on an extension, about 4.95 miles in length, of your Company's Lockport Branch in Lafourche Parish, Louisiana, to serve sugar refineries and intermediate land owners between Lockport and Lower Lafourche. The work was completed in February, 1931. This extension will bring to your Lines a considerable tonnage of cane bagasse and raw sugar heretofore handled by barges.

EXTENSION OF HOUMA (LOUISIANA) BRANCH

Pursuant to authority granted by the Interstate Commerce Commission in its order, dated October 31, 1929, as amended October 11, 1930, in Finance Docket No. 7813, an extension of your Company's Houma Branch, from Houma, Louisiana, about 4.26 miles in a general southeasterly direction to a connection with a narrow gauge railroad serving a sugar plantation and refinery on Bayou Terrebonne about twenty miles southeast of Ashland, Louisiana, was completed during the year. The work also involved the erection of a 228 foot draw bridge over the Intra-Coastal Canal. It is expected that this extension will give your Company valuable tonnage of cane bagasse, molasses, and sugar.

BRIDGE OVER BUFFALO BAYOU (TEXAS)

The work of replacing a 228 foot steel swing draw span over Buffalo Bayou, at the head of the Houston Ship Channel, with a 300 foot steel swing draw span of heavier construction; of encasing the present 23 foot diameter cylinder in concrete; and of constructing two creosoted pile rest piers; was completed during the year. The new bridge will permit the use of heavier power and the maximum loading of cars between Houston and Galveston.

TRESTLE AT KEEFER, TEXAS

The work of replacing a 1,585 foot open-deck trestle near Keefer, Texas, on the line between Houston and Shreveport, with a 1,590 foot standard five pile ballast-deck trestle; of constructing two fire walls in the new trestle; and of raising the grade of the track above the flood line at this point; was completed during the year.

NEW WATER TREATING PLANTS

There were completed during the year 1930, forty-four water treating plants at important water stations on the Texas and Louisiana Lines. These water treating plants were installed for the purpose of eliminating scale forming impurities from the water used in locomotive boilers, and will result in a considerable saving in operating expenses.

CAR TRANSFER BARGE "MAMMOTH"

During the year 1930, the car transfer barge "Mammoth," operated in train ferry service betweei Algiers and New Orleans, Louisiana, was lengthened from 308 feet to 452 feet. This was accomplished by the insertion of a steel center section 144 feet in length, constructed at Ambridge, Pa., and floated down the Ohio and Mississippi Rivers to Algiers, Louisiana, where the work was completed. This extension increased the carrying capacity of the "Mammoth" from eight passenger cars with one switch and one road locomotive to fourteen passenger cars with one switch and one road locomotive.

Great Northern-Western Pacific Project in Northeastern California and Southern Oregon

On page 29 of last year's report mention was made of the application to the Interstate Commerce Commission, filed by the Great Northern Railway Company and the Western Pacific Railroad Company for authority to build extensions of their respective lines southerly from Kalmath Falls, Oregon, and northerly from Keddie, California, to connect at Bieber, California, a distance of approximately 200 miles, to form a physical connection between the Western Pacific and the Great Northern, and reference was made to the fact that such extension was strongly opposed by your Company for the reason that it would result in a serious diversion of lumber traffic and of some local and transcontinental passenger traffic from your Lines.

The Interstate Commerce Commission, however, in its order dated June 9, 1930, in Finance Docket No. 7439, authorized the construction of such extension on the grounds that public convenience and necessity justified the construction.

Southern Pacific Golden Gate Ferries, Ltd.

On page 32 of last year's report mention was made of the formation of the Southern Pacific Golden Gate Ferries, Ltd., and the beginning of its operations on May 1, 1929. During the year 1930, the first complete calendar year of operation, 6,117,186 vehicles were transported over all routes, an increase of 263,348 vehicles, or 4.50 per cent, compared with 1929. The net income for 1930 was $1,004,493.89, an increase over 1929 of $242,305.07, or 31.79 per cent.

Pacific Greyhound Corporation

On page 30 of last year's report mention was made of the acquisition by the Southern Pacific Company of a one-third interest in the capital stock of the Pacific Transportation Securities, Inc., the name of which was changed on April 1, 1930, to "Pacific Greyhound Corporation," a holding company for most of the important motor coach lines in the territory west of El Paso, Texas, and Ogden, Utah, and south of Portland, Oregon.

Operations of the merged companies during the year 1930 extended over an average of 8,629 route miles, on which their motor coaches ran a total of approximately 29,400,000 miles and carried 8,521,910 passengers. Gross operating revenues were $8,808,785.45; and after deducting therefrom $6,475,732.39 for operating expenses, $792,574.53 for taxes, $6,430.18 for other charges, and $1,210,141.82 for depreciation, there remained a net income of $413,906.53.

Southland Greyhound Lines

On page 31 of last year's report mention was made of the acquisition by your Company, on December 31, 1929, of a one-third interest in the common capital stock of the Southland Greyhound Lines, Incorporated, a Delaware corporation, which owns the entire outstanding capital stock of a Texas corporation of the same name, operating motor coaches within the State of Texas and between the Texas-Louisiana state line and Lake Charles, Louisiana. During the year 1930 some rearrangement of schedules and forces was effected, and several unprofitable lines were discontinued, resulting in more efficient and economical operations. A permit for operation over the "Old Spanish Trail" between Junction and Pecos, Texas, two hundred and ninety miles, was also acquired during the year, together with thirteen new buses. With the acquisition of this permit, the Southland Greyhound Lines now operate two transcontinental routes, one through Fort Worth, Texas, along the "Bankhead Highway," and the other over the "Old Spanish Trail," through San Antonio, Junction, and Pecos, Texas. Operations during the year extended over an average of 2,248 route miles on which the company's motor coaches ran a total of approximately 7,700,000 miles and carried 1,035,786 passengers.

Pacific Motor Transport Company

On page 32 of last year's report mention was made of the Pacific Motor Transport Company, organized under the laws of California for the purpose of providing shippers and receivers of less-than-carload freight, in the territory served by your Pacific Lines, with store-door pick-up and delivery service in connection with rail station to station movement of such traffic. The service consists of store-door pick-up and delivery of less-than-carload freight moving between various stations, the pick-up and delivery service being rendered by local transfer companies, or by draymen, under contract arrangements, the rail lines being used for the line-haul service. The results of this service have been satisfactory, and the operations of the Pacific Motor Transport Company have been extended during the year, and at December 31, 1930, it was operating quite generally through the territory served by your Lines in California and Oregon. The operations thus far have been intrastate in character, but it is expected soon to file with the Interstate Commerce Commission, tariffs for handling interstate traffic between California and Oregon and also between California and Arizona.

Southern Pacific Transport Company

In order to provide the shippers and receivers of less-than-carload freight, in the territory served by your Texas and Louisiana Lines, with store-door pick-up and delivery service similar to that rendered by the Pacific Motor Transport Company on the Pacific Lines, the Southern Pacific Transport Company was organized during the year, under the laws of the State of Texas, and commenced operations on August 1, 1930. The results of this service have also been satisfactory, and operations have been extended, so that at December 31, 1930, such service was available at 265 stations of the Texas and Louisiana Lines. This service is increasing in popularity, and the outlook for continued success in recapturing less-than-carload freight from highway motor truck carriers is promising.

Motor Coach Activities of the Pacific Electric Railway Company

Operation of motor coach lines by the Pacific Electric Railway Company continued during the year with such modifications in schedules and service as were necessary to meet the changing conditions.

The Pacific Electric Railway Company, during the year

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1930, in conformance with the plan mentioned on page 31 of last year's report, acquired from the Pacific Greyhound Corporation, 871,284 shares, or two-thirds, of the outstanding capital stock of the Motor Transit Company, which company operates a fleet of 127 buses over 841 miles of bus routes in the vicinity of Los Angeles, and in the counties of Orange, Riverside, and San Bernardino, California. The service of the Motor Transit Company is being coordinated with that of the Pacific Electric Railway Company, and considerable saving in operating expenses of the former company will be effected early in 1931, by the consolidation of the accounting, treasury, and traffic departments of that company with those of the Pacific Electric Railway Company.

Proposed Acquisition of St. Louis Southwestern Railway Company

For many years there has been a growing need to extend your Texas and Louisiana Lines to some principal distributing point in the Central Mississippi Valley in order that your Company may obtain a proper share of the north and south competitive traffic.

To meet this need, the Southern Pacific Company on July 25, 1930, filed an application with the Interstate Commerce Commission, Finance Docket No. 8393, for authority to acquire control, by purchase of a majority of the outstanding capital stock, of the St. Louis Southwestern Railway Company; operating approximately 1,800 miles of railroad extending from St. Louis, Mo., Cario, Ill., and Memphis, Tenn., to various points in Texas and Louisiana. The lines of the St. Louis Southwestern Railway Company connecting, as they do, with those of your Texas and Louisiana Lines at fourteen different points, form a practical route for through rail traffic moving between territory on your existing Lines and such Central Mississippi Valley gateways. The control of the St. Louis Southwestern Railway Company will enable your Company to obtain a larger share of the competitive traffic passing through such gateways, and will permit of economies in operation through consolidation of terminals at contact points, coordination of service, etc.

The Interstate Commerce Commission has held two hearings on your Company's application, and it is hoped that a favorable decision will be rendered during 1931.

Acquisition of Clackamas Eastern Railroad Company

Pursuant to authority granted by the Interstate Commerce Commission in its order, dated April 29, 1930, in Finance Docket No. 8010, the Southern Pacific Company, on May 26, 1930, acquired control of the Clackamas Eastern Railroad Company by purchase of the entire capital stock of such company.

This line opens up a territory estimated to contain approximately two and one-half billion feet of merchantable timber, and will give your Lines a large increase in the tonnage of forest products.

Acquisition of the Inter-California Southern Railway Company, S. A.

During the year your Company acquired the entire outstanding capital stock of the Inter-California Southern Railway Company, S. A., which company owns a line of railroad entirely within the Republic of Mexico, connecting at Pascualitos, Mexico, with the line of the Inter-California Railway Company, a wholly owned subsidiary of the Southern Pacific Company, and extending southeasterly toward the Gulf of California for a distance of approximately forty-three miles. The Inter-California Southern Railway taps a large agricultural region in Lower California, with soil similar in character to the best part of the Imperial Valley now under cultivation, and the acquisition of this line is expected to result in a considerable increase in the tonnage of cotton, alfalfa, and other agricultural products. The new line is expected to be opened for traffic about July 1, 1931.

Sacramento River Steamer Service

On January 15, 1930, the steamer service, heretofore operated by your Company on the Sacramento River between San Francisco and Sacramento, California, was discontinued. This service was established about fifty years ago to carry a large amount of produce grown in the delta region of the Sacramento Valley. Due to the subsequent building of railroad lines and paved highways into this region, the business gradually fell away from the river boats, so that the small amount of tonnage secured by the steamers did not warrant their continued operation.

Southern Pacific Railroad Company of Mexico

The operations of the Southern Pacific Railroad Company of Mexico proceeded during the year 1930 without interruption other than for minor washout and slide difficulties which resulted in temporary delay only. The amounts due from the Mexican Government for transportation services rendered on account of the revolution of 1929, and practically all amounts due for transportation services performed for that Government during 1929 and 1930, have been paid. Payment, however, has not been received for the $703,000 due from the Mexican Government for damage to the property resulting from the revolution of 1929, but the subject is being actively followed up with the Government.

Expressed in U. S. currency, operating revenues amounted to $6,580,666.17, a decrease of $429,138.88, or 6.12 per cent., due to the general depression; and operating expenses were $5,548,415.24, a decrease of $90,529.52, or 1.61 per cent. After deductions for Taxes, Equipment Rents, Joint Facility Rents, and Uncollectible Railway Revenues, there was a net operating income of $650,129.18, a decrease compared with 1929 of $354,476.97, or 35.29 per cent.

Industrial

During the year 1,023 new industries were established on the lines of the Southern Pacific Transportation System and 114 industries left the rails of your Lines either through removal to other locations, abandonment of their several enterprises, or through merger with other companies, leaving a net gain during the year of 909 industries. Among the new industries locating on the Pacific Lines are (1) a large factory at Long Beach, Calif., for the manufacture of soap and soap products; (2) an automobile assembling plant at shipside in Richmond, Calif.; and (3) a large chemical plant near Pittsburg, Calif., primarily for the manufacture of ammonium sulphate. Each of these industries will have an ultimate investment of approximately $5,000,000. New industries locating on the Texas and Louisiana Lines include a large chemical manufacturing plant at Houston, Texas; a grain elevator at Fort Worth, Texas, with a present capacity of 750,000 bushels, which it is expected later on will be increased to 5,000,000 bushels; and an eleven-story building of fireproof construction at Houston, Texas, containing about 700,000 square feet of floor space and costing approximately $4,000,000. The company owning the building last mentioned conducts a general warehousing and distributing business and acts as warehouseman and manufacturers agent for outside concerns. The building also contains a cold storage plant, sample display rooms, offices, and space for the operation of individual industries for either wholesale or retail businesses. In addition to these new industries, numerous existing industries made extensive additions to their plants during the year, among these being the construction of a second unit of a sulphur mining plant at New Gulf, Texas; the completion of a $4,000,000 copper refinery at El Paso, Texas, with a capacity of 100,000 tons a year; the enlargement of an oil refinery located on the Houston Ship Channel, costing approximately $2,000,000; a new brick manufacturing plant at Pittsburg, Calif., with a capacity of 30,000 brick a day; and the construction of three large steam plants for generating electrical power at Herndon, Calif., which will cost approximately $4,500,000.

General Traffic Conditions

As set forth elsewhere in this report the operating revenues of your Company in common with those of other carriers, were adversely affected during the year by the nation-wide depression which developed in the latter part of 1929 and continued through 1930, the result, especially when compared with 1929, the peak year in the history of your Company, having been far from satisfactory. This depression accounted for a decline in revenues of 19.10 per cent. in the products of mines; 26.16 per cent. in the products of forests; 22.32 per cent. in manufactures and miscellaneous; and 19.67 per cent. in less-than-carload freight. Some comfort is to be found in the fact, however, that the decline in the revenues from agricultural products, which constitutes approximately 28 per cent. of your Company's freight revenues, was only 2.70 per cent. Encouragement is also offered by the fact, as stated elsewhere on this page, that 1,023 new industries were located on the System during 1930, as against 114 industries leaving the System by moving to other locations or merging with other enterprises, leaving a net gain of 909 in the number of industries for the year. It is expected that these industries will bring your Company a very considerable amount of valuable tonnage.

In connection with coastwise traffic between Pacific Coast ports, on July 10, 1930, the Interstate Commerce Commission issued an order approving the revision of rail line rates between Pacific Coast ports, on the basis of certain arbitraries over the published rates of standard steamer lines operating between the same ports, and the maintenance of higher rates at intermediate points, in accordance with the request of your Company. The order further provides that the terminal rail rates may be changed from time to time to bring them in line with any changes which may occur in the water rates. This will place your Company in a more favorable position to compete with water lines for this coastwise traffic, and it is expected that a larger share of such traffic will now be secured.

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During the year 1930, a hearing was held before the Interstate Commerce Commission in connection with your Company's application for authority to establish rates between Atlantic and Pacific ports via your steamship and rail lines, which will enable your Company to secure a larger share of the traffic now moving via water carriers operating through the Panama Canal, and a proposed report has been issued by the examiners recommending the relief sought. The matter has been orally argued before the entire Commission and is now awaiting final decision.

Faced with continued decreases in revenues, for the reasons stated, your Company's management adopted measures to meet the problem in the most effective way possible. The economies in operation effected were accomplished without impairing the operating efficiency or the safety of operation of your properties. As a result of the large sums which have been expended during past years for improvements, extensions, and additions and betterments, and the high standard at which the properties have always been maintained, they are now in excellent physical condition, and with revival of business your Company will be in a position to handle safely and expeditiously all traffic that may be offered.

During the year 1930, taxes consumed 27.1 per cent. of the net revenue from railway operations of your Lines. For several years your Company has been returning to the public in taxes each year approximately the same amount it has returned to its stockholders as dividends on their investment in the property.

In an endeavor to recapture the freight traffic lost to motor trucks handling less-than-carload freight, your Company has caused the formation of the Pacific Motor Transport Company and of the Southern Pacific Transport Company, which render a store-door pickup and delivery service, and the gratifying results of this service during the short time it has been in operation give encouraging promise of its ultimate success. Your Company is making every effort to recover the passenger traffic lost to motor coaches. This is being done by putting into effect lower experimental fares between various points both for one way and round trip travel; by the installation of new and up-to-date passenger equipment; and by the substitution on certain lines, of other forms of transportation by means of which more frequent service can be given, than would be profitable by steam passenger trains.

Natural gas pipe lines, aggregating 1,027 miles, were constructed in California during 1929 and 1930 and further extension of such lines will be made during 1931; for example, orders have been placed for 250 miles of pipe line in southern California; another line is projected from Milpitas to San Francisco; and a line is now under construction from El Paso, Texas, through Douglas and Bisbee, Arizona, to Cananea, Mexico, which will serve copper smelters that have been users of large quantities of fuel oil. Our losses are partially offset by temporary increases in revenues from the movement of pipe, but after the gas lines are in full use there will be a permanent loss in revenues from the movement of fuel oil.

Federal Valuation of Railroads

On page 35 of last year's report attention was called to the fact that briefs had been filed in the valuation cases of all your Companies and that these cases had been submitted to the Interstate Commerce Commission for final decision. During the year 1930 the Interstate Commerce Commission issued its report and final value as of June 30, 1919, for rate making purposes, of the San Antonio & Aransas Pass Railway Company, the total value of property used for common carrier purposes as of June 30, 1919, being stated as $17,962,529, compared with $17,402,723, allowed in the tentative valuation previously tendered, or an increase of $559,806 over the tentative valuation. This final valuation of the San Antonio & Aransas Pass Railway Company, together with those of the Franklin & Abbeville Railway Company and the Texas Midland Railroad, mentioned in last year's report, represent the only final valuations rendered to date on the properties of your Company.

Employes' Relief Loan Fund

Following the necessary reduction in forces incident to the decrease in business during the past year, your Company joined its officers and employes in the establishment of an Employes' Relief Loan Fund, under a plan whereby those officers and employes who wished to do so, could subscribe one per cent. of their earnings each month, beginning January 1, 1931, and continuing for a period of six months, unless the need therefor disappeared at an earlier date, your Company agreeing to subscribe an amount equal to that subscribed by its officers and employes. The plan provides that the money so subscribed shall be used in making loans without interest to employes who had been laid off or who were working part time only, such loans to be repaid by the borrowers when their circumstances permit. To March 1, 1931, sixty per cent. of the employes have subscribed $115,267 which, with an equal amount subscribed by the Company, created a total fund as of that date of $230,534. A total of 2,163 loans aggregating $101,613 have been made to March 1, 1931, to employes temporarily out of employment. Your Company's doctors have also volunteered their services in caring for sickness in families of employes receiving help from the fund.

General

Under the pension system put into effect January 1, 1903, there were carried on the pension rolls at the end of the year, 2,202 employes. The payments to pensioners for the year amounted to $1,429,470.74, equivalent to six per cent. per annum on an investment of $23,824,512.33.

The Committee announces the death on October 8, 1930, of Mr. G. W. Mulks, retired Controller of your Company, and the death on October 22, 1930, of Mr. A. K. Van Deventer, retired Treasurer of your Company. Mr. Mulks entered the service in October, 1891, and retired in September, 1926, and Mr. Van Deventer entered the service in November, 1881, and retired in October, 1925. These gentlemen rendered faithful and efficient services during the many years they were connected with the Company, and it is with sorrow that we now record their deaths.

The continued loyalty and the efficient services of officers and employes are gratefully acknowledged.

By order of the Executive Committee,

HALE HOLDEN,

Chairman of the Executive Committee.

[Advertisement]

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Car Retarders in the Blue Island, Ill., Yard of the Indiana Harbor Belt

Missouri-Kansas-Texas Railroad Company

and Controlled Companies

Annual Report for the Year Ended December 31, 1930

St. Louis, Mo., April 21, 1931.

TO THE STOCKHOLDERS:

The Board of Directors submits herewith report of the operations and affairs of your property for the year ended December 31, 1930.

A summary of results of operation compared with the year 1929 is as follows:

	1930	1929	+Increase or —Decrease	Per Cent
Operating Revenues	$45,948,859.05	$56,024,439.15	—$10,075,580.10	18.0
Operating Expenses	30,225,002.64	37,456,339.57	— 7,231,336.93	19.3
Net Operating Revenue	$15,723,856.41	$18,568,099.58	—$ 2,844,243.17	15.3
Taxes	2,356,928.85	3,289,868.20	— 932,939.35	28.4
Uncollectible Railway Revenues	13,551.46	17,102.80	— 3,551.34	20.8
Railway Operating Income	$13,353,376.10	$15,261,128.58	—$ 1,907,752.48	12.5
Miscellaneous Income	969,906.37	803,782.72	+ 166,123.65	20.7
	$14,323,282.47	$16,064,911.30	—$ 1,741,628.83	10.8
Rentals and Other Payments	2,348,823.17	2,468,664.14	— 119,840.97	4.9
Income for Year Available for Interest	$11,974,459.30	$13,596,247.16	—$ 1,621,787.86	11.9
Fixed Interest Charges for Year	4,195,450.88	4,200,673.13	— 5,222.25	.1
Balance Available for Interest on Adjustment Bonds	$ 7,779,008.42	$ 9,395,574.03	— 1,616,565.61	17.2
Interest on Adjustment Bonds	696,461.21	869,333.30	— 172,872.09	19.9
Net Income	$ 7,082,547.21	$ 8,526,240.73	— 1,443,693.52	16.9

Financial

Preferred Stock, Series "A", increased during the year by $1,584,343.44, of which $1,569,500.00 was for conversion of a similar amount of Adjustment Mortgage 5%, Series "A" Bonds and $14,843.44 issued for corporate purposes.

Common Stock (no par value) increased during the year $9,713.83 represented by 117.8577 shares issued for corporate purposes.

Long Term Debt decreased $1,663,600.00, of which $1,569,500.00 is represented by Adjustment Mortgage 5%, Series "A" Bonds converted into Preferred Stock, Series "A", and $94,100.00 underlying bonds and equipment notes paid and retired.

During the year $7,000.00 of underlying Bonds were exchanged for a similar amount of Prior Lien, Series "A" Bonds.

Dividends were declared during the year at the rate of 7% per annum on Preferred Stock, Series "A", and $3.00 per share on the Common Stock, outstanding in the hands of the public.

"Reorganization Suspense" account heretofore carried as a liability and which at December 31, 1930, amounted to $29,694,547.82, representing securities issued in excess of requirements in the reorganization of the property and cash received from the Reorganization Managers was, with the approval of the Interstate Commerce Commission, credited at the close of the year to "Investment in Road" account.

The Interstate Commerce Commission granted our application for authority to charge Profit and Loss with $1,657,312.50 covering equipment retirements during the year.

Operation

Passenger train revenues, including mail and express, have continued to decline, due to the general depression in business and to bus and automobile competition. Revenue from passengers carried in 1930 was less than in 1929 by $1,160,157 or 18.69%.

The total operating revenues during 1930 were $10,075,580 less than in 1929, or 17.98%. In this connection, however, it is gratifying to be able to state that by strict economy, operating expenses were decreased 19.31%, which was in slightly greater ratio than the decrease in revenue.

Train operation, both freight and passenger, was generally satisfactory throughout the year. The year 1930 closed with roadway, bridges, structures and rolling stock, including locomotives and cars, in good condition.

Aside from the loss in revenue incident to the general business depression, our freight revenue has been adversely affected by the more extensive use of gas as a substitute for coal for both domestic and commercial purposes, by the more extensive use of pipe lines for the transportation of crude oil, by the reduction in rates on cotton in the south Texas territory to compete with trucks on this class of traffic and by decisions of

Missouri-Kansas-Texas Lines—Consolidated General Balance Sheet

Assets

	December 31, 1930	December 31, 1929	+Increase or —Decrease
INVESTMENTS:			
Investment in Road and Equipment:			
Road	$210,517,676.61	$238,533,117.75	—$28,015,441.14
Equipment	52,145,654.35	53,160,992.88	— 1,015,338.53
	$262,663,330.96	$291,694,110.63	—$29,030,779.67
Improvements on Leased Railway Property	$ 3,564.07	$ 3,564.07	.....
Deposits in Lieu of Mortgaged Property Sold	212.50	212.50	.....
Miscellaneous Physical Property	1,102,841.44	1,095,862.17	+ 6,979.27
Investments in Affiliated Companies—Pledged	527,000.00	527,000.00	.....
Investments in Affiliated Companies—Unpledged	1,168,233.69	1,050,761.46	+ 117,472.23
Other Investments:			
United States Government Securities	.....	3,071,406.25	— 3,071,406.25
Other Securities	624,072.65	673,171.44	— 49,098.79
TOTAL INVESTMENTS	$266,089,255.31	$298,116,088.52	—$32,026,833.21
CURRENT ASSETS:			
Cash	$ 6,469,720.09	$ 3,256,270.36	+$ 3,213,449.73
Time Drafts and Deposits	6,479,926.84	5,115,520.58	+ 1,364,406.26
Special Deposits	24,130.84	26,389.67	— 2,258.83

Liabilities

	December 31, 1930	December 31, 1929	+Increase or —Decrease
STOCK:			
CAPITAL STOCK:			
Preferred, Series "A" (Par value $100.00 per share)	$ 66,660,708.26	$ 65,076,364.82	+$ 1,584,343.44
Common (No par value. See note)	66,662,864.87	66,653,151.04	+ 9,713.83
STOCK LIABILITY FOR CONVERSION:			
Preferred, Series "A" (Par value $100.00 per share)	43,027.35	57,870.79	— 14,843.44
Common (No par value. See note)	26,619.61	36,333.44	— 9,713.83
TOTAL STOCK	$133,393,220.09	$131,823,720.09	+$ 1,569,500.00
LONG TERM DEBT:			
Mortgage Bonds	$ 93,204,179.30	$ 93,214,179.30	—$ 10,000.00
Equipment Trust Obligations	420,500.00	504,600.00	— 84,100.00
Income Mortgage Bonds	13,577,567.24	15,147,067.24	— 1,569,500.00
TOTAL LONG TERM DEBT	$107,202,246.54	$108,865,846.54	—$ 1,663,600.00
CURRENT LIABILITIES:			
Traffic and Car Service Balances Payable	$ 773,826.38	$ 892,746.46	—$ 118,920.08
Audited Accounts and Wages Payable	3,512,281.60	3,492,760.84	+ 19,520.76
Miscellaneous Accounts Payable	91,329.84	109,785.67	— 18,455.83
Interest Matured Unpaid	1,637,457.65	1,666,746.86	— 29,289.21
Dividends Matured Unpaid	1,987,727.00	19,316.25	+ 1,968,410.75
Funded Debt Matured Unpaid	15,865.00	18,250.00	— 2,385.00
Unmatured Interest Accrued	458,102.10	499,756.51	— 41,654.41

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Assets

	December 31, 1930	December 31, 1929	+Increase or —Decrease
Loans and Bills Receivable:			
Time Loans	2,226,765.02	4,905,992.38 —	2,679,227.36
Other Bills Receivable	44,923.61	42,263.54 +	2,660.07
Traffic and Car Service Balances Receivable	696,815.44	751,796.73 —	54,981.29
Net Balance Receivable from Agents and Conductors	616,342.77	815,967.08 —	199,624.31
Miscellaneous Accounts Receivable	992,711.39	1,204,514.78 —	211,803.39
Material and Supplies	4,674,431.38	5,459,277.40 —	784,846.02
Interest and Dividends Receivable	105,845.29	87,506.75 +	18,338.54
Other Current Assets	22,817.74	23,946.02 —	1,128.28
TOTAL CURRENT ASSETS	$ 22,354,430.41	$ 21,689,445.29 +	$ 664,985.12
DEFERRED ASSETS:			
Working Fund Advances	$ 107,423.41	$ 87,885.37 $+	19,538.04
Other Deferred Assets	1.00	2.00 —	1.00
TOTAL DEFERRED ASSETS	$ 107,424.41	$ 87,887.37 +	$ 19,537.04
UNADJUSTED DEBITS:			
Rents and Insurance Premiums Paid in Advance	$ 86,606.78	$ 100,813.53 —	$ 14,206.75
Other Unadjusted Debits	585,882.92	228,590.88 +	357,292.04
TOTAL UNADJUSTED DEBITS	$ 672,489.70	$ 329,404.41 +	$ 343,085.29
TOTAL	$289,223,599.83	$320,222,825.59 —	$30,999,225.76
The following Assets not included in Balance Sheet Accounts:			
Securities Held for Exchange of Underlying Securities:			
Long Term Debt	$ 31,666,500.00	$ 31,767,600.00 —	$ 101,100.00
Securities Issued or Assumed—Unpledged:			
Preferred Stock, Series "A"	5,528,364.39	5,528,364.39	.....
Common Stock	15,730,515.52	15,730,515.52	.....
Long Term Debt	11,687,205.46	11,593,105.46 +	94,100.00
Securities Issued or Assumed—Pledged:			
Long Term Debt	17,504,000.00	17,497,000.00 +	7,000.00

NOTE—Intercorporate Assets and Liabilities are excluded.

Liabilities

	December 31, 1930	December 31, 1929	+Increase or —Decrease
Unmatured Rents Accrued	99,412.89	77,221.63 +	22,191.26
Other Current Liabilities	90,883.73	131,949.04 —	41,065.31
TOTAL CURRENT LIABILITIES	$ 8,666,886.19	$ 6,908,533.26 +	$ 1,758,352.93
DEFERRED LIABILITIES:			
Other Deferred Liabilities	$ 54,483.63	$ 49,018.12 +	$ 5,465.51
UNADJUSTED CREDITS:			
Tax Liability	$ 1,457,771.87	$ 2,121,652.31 —	$ 663,880.44
Accrued Depreciation—Equipment	12,553,708.95	11,827,745.73 +	725,963.22
Other Unadjusted Credits	348,684.56	1,368,266.15 —	1,019,581.59
Reorganization Suspense	.....	29,887,033.17 —	29,887,033.17
TOTAL UNADJUSTED CREDITS	$ 14,360,165.38	$ 45,204,697.36 —	$30,844,531.98
CORPORATE SURPLUS:			
Additions to Property through Income and Surplus	$ 70,157.86	$ 63,503.65 +	$ 6,654.21
Profit and Loss—Balance	25,476,440.14	27,307,506.57 —	1,831,066.43
TOTAL CORPORATE SURPLUS	$ 25,546,598.00	$ 27,371,010.22 —	$ 1,824,412.22
No provision has been made for proposed additional assessments in respect to prior years' Federal Income Taxes, under appeal and special claims in respect to interline freight revenue divisions with Western Trunk Line Carriers.			
TOTAL	$289,223,599.83	$320,222,825.59 —	$30,999,225.76
The following Liabilities not included in Balance Sheet Accounts:			
Securities held for Exchange of Underlying Securities:			
Long Term Debt	$ 31,666,500.00	$ 31,767,600.00 —	$ 101,100.00
Securities held by or for the Company—Unpledged:			
Preferred Stock, Series "A"	5,528,364.39	5,528,364.39	.....
Common Stock	15,730,515.52	15,730,515.52	.....
Long Term Debt	11,687,205.46	11,593,105.46 +	94,100.00
Securities held by or for the Company—Pledged:			
Long Term Debt	17,504,000.00	17,497,000.00 +	7,000.00

The Company is guarantor, jointly with other Companies, of the securities of certain terminal companies, none of which is in default.

NOTE:—There were 808,819.0351 shares Common Stock outstanding in hands of the public December 31, 1930, an increase of 117.8577 shares. There were also 322.9751 shares included in Stock Liability for Conversion on December 31, 1930, a decrease of 117.8577 shares.

a minor nature by the Interstate Commerce Commission. Truck competition in our territory continued to make inroads on freight traffic, particularly in the movement of merchandise, live stock, automobiles and cotton. To meet this character of competition, the Missouri, Kansas & Texas Transportation Company, all of the capital stock of which Company is owned by the Missouri-Kansas-Texas Railroad Company, was organized during the year to perform a pick-up and delivery service on less than carload freight at the more important stations in Texas. This service is meeting with success. Similar service in other states has not been established for the reason that truck rates therein are unregulated by government authorities. Further efforts are being made to restore this truck traffic to the railroads, and helpful support in this respect is being given by Chambers of Commerce and business organizations.

The Interstate Commerce Commission granted our application for authority to suspend $183,055 expended during the month of December, 1930, covering heavy repairs to equipment; this amount to be cleared from Suspense by charges to Operating Expenses during the year 1931. The equipment so repaired was not required for service and the repairs were made for the purpose of reducing the unemployment situation.

Additions to Property

Additions and improvements to the road, during the year, involved capital account charges amounting to $1,679,107.

The more important road improvements consisted of: completion of concrete substructure for replacement of Missouri River bridge at Boonville, Missouri; replacing 2,532 lineal feet of timber trestles with concrete structures; installation of automatic block signals protecting 146.9 miles of track at various locations; application of 869,173 tie plates and 268,171 rail anchors and grade separations at eight locations.

Expenditures for new equipment amounted to $1,585,866 and expenditures for improvements to existing equipment amounted to $158,260. The amount of retirements, for the year, less replacements was $2,759,465. There was a net decrease in value of equipment owned, amounting to $1,015,339.

Federal Valuation

The Interstate Commerce Commission did not serve a final valuation upon the property of Missouri-Kansas-Texas Lines during the year 1930. The work required by the Commission in connection with bringing valuations down to December 31, 1927, has been practically completed. The Commission recently directed the bringing of valuations down to December 31, 1929. The cost of valuation work to end of 1930 aggregated $1,693,935.67.

Industrial Development

During the year, 213 new industries representing an investment of approximately $5,250,000 were established on rails of the company, and during the same period, 14 existing establishments with an investment of approximately $280,000 were removed, leaving a net gain, during the year, of 199 new industries, having an invested capital of approximately $5,000,000.

During the year contracts were concluded for oil and gas development on approximately 130 acres of company property adjacent to Oklahoma City, Oklahoma. Four producing wells were completed on this property during the latter part of the year but due to proration regulations restricting production, income from royalty during the year was nominal.

M. H. CAHILL,
President.

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